THE OLD TIMER'S BULLETIN

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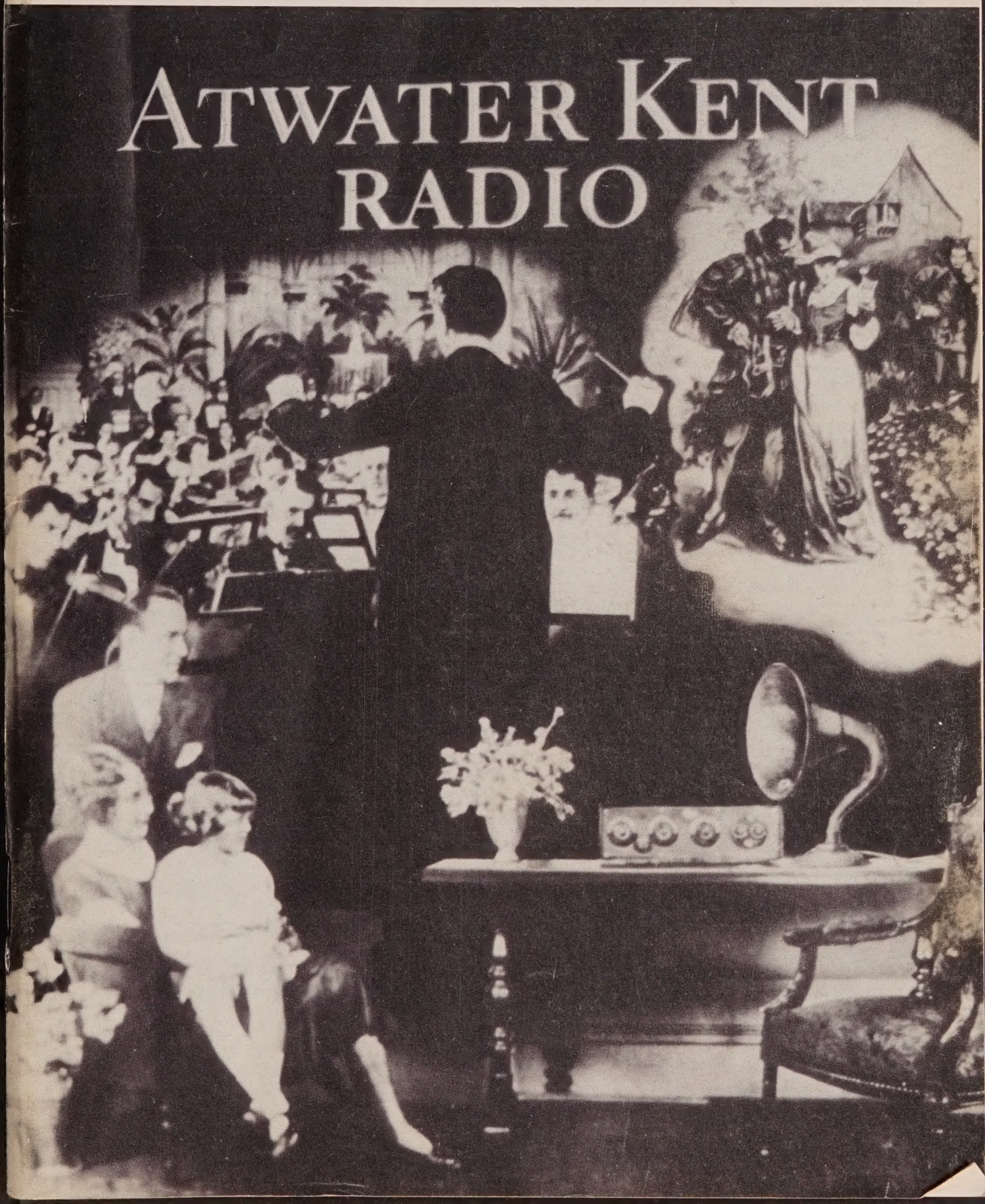

Devoted to research and documentation of the history of wireless communications.

Member:
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Regional Conference of Historical Agencies

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AWA DUES: Mail check, payable to AWA, to Joyce Peckham, Box E, Breesport, NY 14816. First Class mailing: 1 year, $10.00; 2 years, $20.00; overseas mailing (airmail): 1 year, $12.00

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FROM THE EDITOR

This quarter's OTB focuses on the mainstay of our hobby: the broadcast receiver. We have presentations on interesting sets made by two smaller manufacturers of the Twenties, and by two of the big names of the Thirties. Two other features and four columns cover topics related to broadcast radios and their restoration.

You'll note from the report on the November business meeting that AWA has new, but seasoned, officers. We all owe Lauren Peckham a debt of thanks for his service as president, and welcome Bruce Roloson to this time-consuming task.

The center pages (24 and 25) are a remarkable photomontage by Bill Hurni, W3HWT, in honor of the annual Old-Time CW Contest. A nice piece of work. The contest will be an echo in the headphones as you read this; results in the May OTB.

For you prospective writers: there is continuing need for articles on broadcast receivers in general, sets of foreign manufacture, equipment collecting outside the U. S., etc. Proposed writeups are welcome!

A bit of good news: the Journal of the Audio Engineering Society has recently reprinted Attila Balaton's article on the manufacture of Western Electric tubes from the AWA Review, Vol. 4. It is in the November issue, pp. 949-958. [LAS]

BULLETIN DEADLINES AND MECHANICS

As with all publications, production and printing require some lead time. If you plan to submit material for publication, please adhere to the following dates for the May issue: articles, February 15; meeting notices and news, March 1; want ads, March 10.

Articles on paper, preferably double-spaced, are acceptable as always. However, a growing number of AWA writers use word processors. Especially for longer items, we welcome copy on disk, either unformatted ("ASCII") or formatted via Microsoft Word. We use mainly 5-inch double-sided double-density (DSDD) disks, but can take the newer double-sided high-density (DSHD, 1.2 meg) and other IBM-compatible formats. (Include a paper printout to be sure!) This gets long items into the OTB a lot sooner and more accurately than retyping by hand.

As for photos: note Bob Dennison's helpful article in this issue. Take lots of shots - to a professional, the basic unit of exposure is the *roll* - and send in good-sized prints so the quality will stay sharp when the printer re-shoots them.

COVER: ATWATER KENT STORE PANEL

The scene on the cover is not from the usual paper lithograph. It was photographed from a glass store-display panel, intended to be back-lighted, which is opaque when not illuminated. The set depicted, a Model 20 receiver with a "G" or "H" horn, suggests a vintage of 1925-27.

Ralph Williams, our "AK consultant," has pointed out other details after inspecting a copy. The girl model is the same as AK used for other photos, including the stand-up store cutouts used to promote Model 20s. The symphony-orchestra theme was consistent with AK's first sponsorship of network classical-music broadcasts, about the time of the founding of NBC in 1926.

1989 FALL BUSINESS MEETING AWA BOARD OF DIRECTORS

Lauren Peckham, Outgoing President

The AWA Board met at Canandaigua on November 5, 1989. The Nominating Committee headed by Ed Gable reported that Chet Minges, W2VVG, had chosen not to stand for another term on the Board. Henry O'Meara, WB2NRX, was nominated and elected to replace him. As for officers of the Association, Lauren Peckham had requested to be replaced after 6 years as president. The Committee reported the following slate, which was voted in: Bruce Roloson, president; Dick Ransley, WA2TLR, first vice president; Bill Fizette, K3ZJW, second vice president; Joyce Peckham, secretary; Dex Deeley, treasurer; and Bruce Kelley, W2ICE, curator. The Board applauded Lauren for his long period of service. He will remain active, working with Roloson and Fizette on the 1990 Conference. Bill is the conference chairman.

Joyce Peckham covered membership: currently 3226 in the U. S., 125 in Canada, and 122 elsewhere. The total is up 6% from last year.

Art Kelly covered the dedication during the summer of the office-library in the Museum Annex building at Holcomb (November OTB). The facility, nearly complete, offers insulation, humidity control, work tables, etc. Work teams of members are organizing library materials.

Bruce Kelley detailed the improvements and general maintenance planned for the Museum during the winter. Three more windows will be blocked off for display space, but no major change in the exhibits is planned.

Lauren Peckham covered the 1989's active schedule of regional and joint meets: the Pennsylvania State Museum event, Winston-Salem, Houston (HVRA), Arizona (AARC), Holcomb, IHRS, Tranquility NJ, SCARS, NARC, NFWA, BVWS (London), Elgin (ARCI), and Canandaigua. The latter event drew 940 registered participants. He discussed plans for the 1990 conference: at the Thruway Marriott outside Rochester, on September 12-16. The new hotel should replace the long-outgrown Sheraton Canandaigua. It offers space for an expanded set of activities, including a planned book-and-magazine auction.

Peckham also reported on the mini-poll taken through the OTB. Reader interests include more coverage of early broadcast sets (citing Crosleys), troubleshooting and restoration, foreign equipment, and classic receivers (Scott, etc.). Members were generally satisfied with regional meetings, the Conference, and the museum.

The Board approved a request from Ludwell Sibley to proceed with a fifth issue of the AWA Review. Several papers are on hand; there is still time for others if submitted soon.

Bruce Roloson described some early objectives for his presidency: good videotape coverage of Conference sessions, outside professional (but no-cost) aid in setting up the Museum library, and other improvements.

AWA officers: Kelley, Ransley, Fizette, Deeley, Roloson, (seated) Peckham

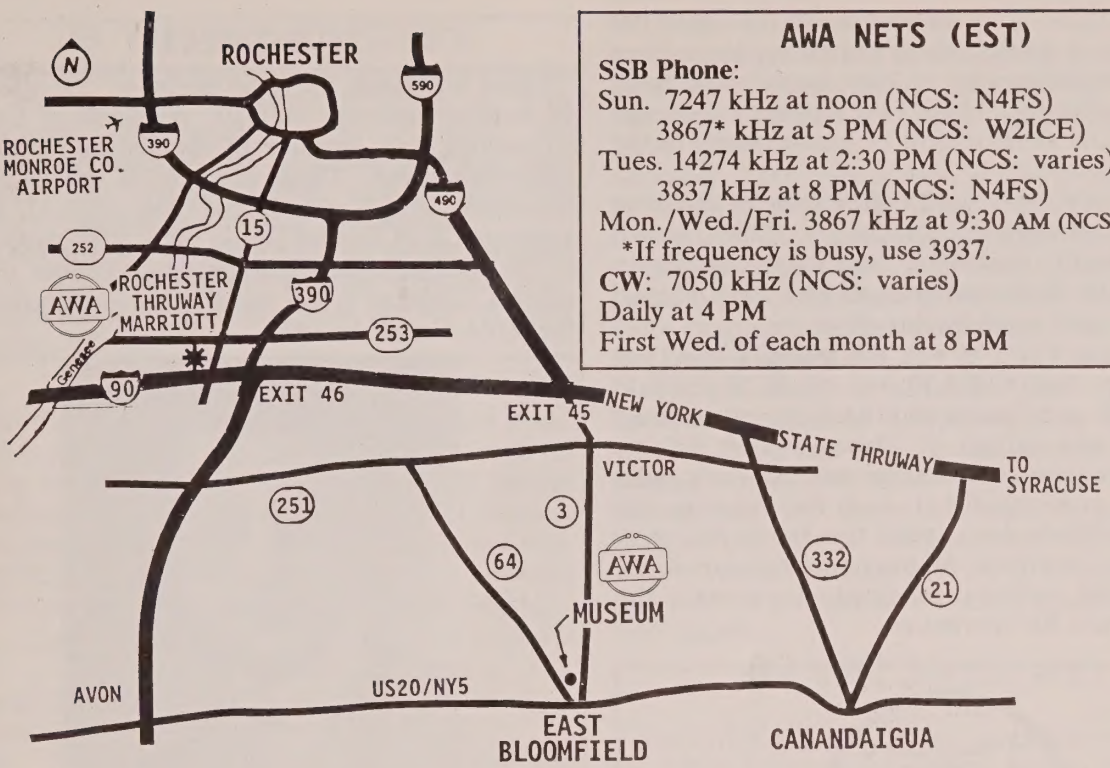
LOCATION DETAILS ON THE 1990 CONFERENCE

The forthcoming AWA Conference (September 12-16) will be at the Thruway Marriott south of Rochester. It is a full-service 300-room hotel about 15 minutes from downtown or from the airport, large enough to allow uncrowded conference sessions and dinners, plus a planned happy hour on Saturday. Veterans of previous conferences will appreciate that the flea-market space is paved.

The hotel is reached from Exit 46 of the New York State Thruway (I-90): take I-390 North to NY 253 West to NY 15 South. As shown on the map on the next page, the site is about 19 miles northwest of Canandaigua, and about 21 miles from the AWA Museum at East Bloomfield. For visitors arriving by air, there is shuttle service, 7 AM to 11 PM.

The Marriott is offering special nightly rates ($65 single, $75 double, $85 triple, $95 quad) up to August 17. These are comparable to rates offered in the past by the Sheraton Canandaigua. Numbers for information and reservations are 800-228-9290 or 716-359-1800.

Rochester itself offers non-radio attractions: the International Museum of Photography at the George Eastman House; the Rochester Museum and Science Center, with its Strasenburgh Planetarium; the Memorial Art Gallery; and the Strong Museum. Kodak provides tours of its largest plant. The Finger Lakes area is available as always.



AWA NETS (EST)

SSB Phone:
Sun. 7247 kHz at noon (NCS: N4FS)
3867* kHz at 5 PM (NCS: W2ICE)
Tues. 14274 kHz at 2:30 PM (NCS: varies)
3837 kHz at 8 PM (NCS: N4FS)
Mon./Wed./Fri. 3867 kHz at 9:30 AM (NCS: W2ICE)
*If frequency is busy, use 3937.
CW: 7050 kHz (NCS: varies)
Daily at 4 PM
First Wed. of each month at 8 PM

1990 CONFERENCE LOCATION

Members at the AWA display set up by John Nagle at the Gaithersburg (MD) Hamfest in September: Paul Mooney, Jack Kingman, Tom Long, Bob Karow, Dave Ridderhof, Frank Roddy, Frank Kopf, Jim Troe, and Bob Hager. Seated: Martha Nagle and John Johnston. Behind the camera: John Nagle.

AWA REVIEW, VOL. 4, AVAILABLE

Volume 4 of the AWA Review offers the historian-collector eight articles. Three deal with vacuum-tube history. John Anderson discusses early tube research at GE, describing how a gifted group of theoreticians and developers turned the imperfect Audion into reliable high-power, high-vacuum devices in only about five years. Attila Balaton covers tube manufacture at Western Electric, commemorating the end of production in 1988. He gives details on the materials and structures used in these products via a step-by-step photo-essay on their construction. Ludwell Sibley writes further on WE tubes, covering the applications of some ordinary-appearing but historic items.

The National HRO was *the* classic SW receiver of the '30s for commercial, military, and serious amateur use. Charles Fisher provides a real service to admirers of this milestone: a painstaking survey of construction details over the first years of production, quite helpful in dating the varied samples in collections.

Lou Moreau provides an analysis of the role that women have played in telecommunications from Greek and Roman times, through the telegraph era. into the world of electronics.

Two articles cover audio transducers. Bob Paquette gives a detailed history of microphones from the very beginnings up to 1950, heavily illustrated from his collection. Floyd Paul supplies a thorough review of the development of loudspeakers in the '20s.

Bill Denk's paper on TV development at Philco in the '30s provides valuable insight. Philco, as well as Farnsworth and RCA, contributed heavily to this art. His illustrated synopsis of a 1937 internal progress report captures this effort.

Vol. 4, and Vol. 3 as well, are orderable via Dexter Deeley: Vol. 4, $10.50; Vol. 3, $9.50 postpaid in the U. S. and Canada (add $4.00 for overseas air mail.) Topics in Vol. 3: Atwater Kent AC receivers; program transmission and the early radio networks; audio quality in early broadcasting; the Lowell and Dunmore patents that led to AC-operated radio receivers; Mignon wireless apparatus; foreign and military telegraph keys; and the Alexanderson RF alternator.

WECo D-80513 condenser microphone, in Bob Paquette's Review Vol. 4 article.

NOMINATIONS FOR AWA HOUCK AWARDS

It is time for members to nominate recipients for the 1990 AWA Houck awards. The nominee for **documentation** must be an AWA member who has written several original articles on radio development or history in the OTB, Review, or other publication. (This can include a book on a related subject). The nominee for **preservation** should be a member who, through personal accomplishment, has acquired and preserved by documenting an outstanding collection of radio artifacts. This definition excludes individuals who regularly buy and sell items.

Consider others' work in the OTB, Review, or other historical media, and send your selection(s) to the Awards Committee, giving your reasons why the nominee(s) should receive the Award. The address: Robert Merriam, 697 Tillinghast Rd., East Greenwich, RI 02818. Nominations by July 1 are preferred.

SILENT KEYS

Harry W. Houck, 93, radio engineer. Licensed as an amateur operator in 1910. Associate of Edwin Armstrong, and inventor of the second-harmonic superheterodyne. Chief engineer of the Dubilier Condenser and Radio Corporation, 1923-31; then assistant CE of Kolster Radio Inc.; later president of the Measurements Corporation. Holder of 40 patents. Pioneer AWA member and originator of the AWA Houck Awards.

Harry W. Houck

H. A. "Robbie" Robinson, W3LW, designer of the BC-348, ARB, AVR-1, and other receivers for GE (1929-30) and RCA Victor (1930-71). Worked as a Radiomarine Corp. of America commercial operator; later received EE degrees from the University of Pennsylvania. Author of receiver articles in QST (Dec. 1932, Jan. 1933, Feb. 1933). Survived by a daughter, Grace Chapman, KA3UEE, and son, Paul Robinson, K2LYW.

BACK ISSUES

The following issues of the Old Timer's Bulletin are in stock. Make a check out to AWA and mail to: Dexter Deeley, 8 Briar Circle, Rochester, NY 14618. All prices are postpaid.

Volume and Number					
1-2@	20-2	22-4	25-1	27-2	29-2
1-3@	20-3	23-1	25-3	27-3	29-3
14-4	20-4%	23-2	25-4	27-4	29-4
17-1	21-1	23-3	26-1	28-1	30-1
18-3	21-2	23-4	26-2	28-2	30-2
19-3*	22-1	24-1	26-3	28-3	30-3
19-4	22-2	24-3	26-4	28-4	
20-1#	22-3	24-4	27-1	29-1	

$2.50 each, except as follows:
@ 1-2 and 1-3, reprints for reference, $0.50 each.
* 19-3 includes Elliott Sivowitch's 20-page monograph "A Technological Survey of Broadcasting's 'Pre-History,' 1876-1920," $4.00.
# 20-1 includes Thorn Mayes' 13-page monograph "The Federal Telegraph Co., 1909-1920," $4.00.
% 20-4 includes Leland Anderson's nine-page monograph "Priority in the Invention of Radio: Tesla vs. Marconi," $4.00.
Index to Vols. 18-29 and Review Vols. 1-3, $4.00.

'89 VRPS-AWA CONFERENCE

The VRPS-AWA meeting held last Fall in Dallas was our greatest to date, in terms of both attendance and auction lots. Nearly 300 participants enjoyed the programs and the sales action. An added "silent" auction Saturday increased bidding to a total of 660 lots sold.

AWA made a fine contribution to the program with a rare sound movie showing tube manufacturing at the RCA Harrison plant in 1936. [Chevie Crandell, VRPS]

FLORIDA MEET

The meet held in Bradenton on December 9 was another success. . . a seminar led by Norm Smith on DXing in the broadcast band. . . about 75 people attending, from as far away as Indiana, Tennessee, Kentucky, and Georgia . . . good flea market with everything from battery sets to TVs. . . repeat performance coming up in March. [Norm Smith]

CALENDAR

March 17 - Local meet, Bradenton, FL
March 23-24 - AWA SE meet, Monroe, NC
April 7-8 - HVRA/AWA meet, Houston
May 4-5 - IHRS-AWA spring meet, Plymouth, IN
May 5 - AWA New York spring meet, Holcomb
May 11-12 - Northern New Jersey meet, Tranquility
May 18-19 - NARC/AWA "Radio Daze," Bloomington, MN; in New York, Rochester Amateur Radio Association (RARA) and ARRL convention
July 13-14 - MARC-AWA "Extravaganza"
September 12-15 - AWA conference, Rochester

FLORIDA MEET

Saturday, March 17

Meeting and flea market at the Stewart Elementary School, 7905 15th Ave., NW, Bradenton. Like the meet announced in the November OTB and reported above. For more information, send an SASE to Norm Smith, 7203 17th Ave., NW, Bradenton, FL 34209, or call (813) 792-0003.

AWA SOUTHEAST REGIONAL MEET

Friday-Saturday, March 23-24

Monroe, NC, 15 miles east of Charlotte. Swapmeet, contest, etc. Members in the Southeast will be mailed fliers. For further details, send an SASE to Ron Lawrence, Box 220094, Charlotte, NC 28222-0094.

HVRA-AWA CONVENTION

Saturday-Sunday, April 7-8

Presented by the Houston Vintage Radio Association at the Astrodome Marriott, 2100 S. Braeswood, Houston, TX 77030, 713-797-9000. Events: Old-equipment contest and auction, Saturday. Banquet, Saturday evening, with KILT's Hudson and Harrigan Team ("they wake up Houston each morning") as speakers. Swapfest, Sunday. Contact: Kathy Botto, 3505 Del Sur Dr., Baytown, TX 77521, 713-468-4911.

INDIANA MEET - IHRS/AWA

Friday & Saturday, May 4-5

Organized by the Indiana Historical Radio Society with AWA at the Holiday Inn, Plymouth, IN (near US 30 and US 31 on SR 17).

Friday: Noon: buffet in the dining room ($3.85); then early registration; 3:30: "show and tell" restoration clinic; 7:00: "Old Tyme Movie," AWA Show, and reception.

Saturday 9:00: registration in lobby; swapmeet in parking lot; 9:30: registration for Old Equipment Contest; 10:00: register auction items; 10:30: contest judging; Noon: buffet, as before; 1:00: auction (10% donation to Museum Fund); 4:00: more swapmeet; 6:30: social hour; 7:00: banquet and contest awards.

For full details (ready after Mar. 1), send an SASE to Ross Smith, 1133 Strong Ave., Elkhart, IN 46514. Programs will be mailed to all AWA members in nearby states by April 1. For room reservations ($39 single, $45 double), contact the Holiday Inn, 2550 N. Michigan Ave. Plymouth, IN 46563. Write, or phone 219-936-4013, and mention IHRS-AWA for special rates not available on the "800" number.

NEW YORK SPRING MEET

Saturday, May 5

Local AWA meet, dinner, and clearance sale at the AWA Annex and American Legion Hall, NY 5 & US 20, Holcomb, NY (2 mi. E. of Museum). 10:30 AM: Surplus-equipment auction. Everything goes; no minimum! Noon: Buffet dinner in Legion Hall ($6, incl. auction card). 1:00 PM: Appraisal contest, open to members attending dinner. 1:30 PM: Auction of members' equipment. Direct sale to buyer; no minimum. Auction card required ($1). Dinner reservations **must** be made by May 1; reservations will not be accepted at the door. Write or phone **now** (don't send money): Bruce Kelley, 716-657-7489, Main St., RD #3, Holcomb, NY 14469, or Lauren Peckham, 607-739-5443, Ormiston Rd., Breesport, NY 14816.

NORTHERN NEW JERSEY MEET

Friday-Saturday, May 11-12

"The Still," Tranquility, NJ, Sussex County Rte. 517, 2 mi. north of exit 19 of I-80 (Allamuchy exit; same as last year).

During previous meets, AWA members have been staying at the Panther Valley Motor Inn on Friday night, joining us for dinner at "The Still" that evening. We are expanding that practice with a Friday program of interest to the men and their ladies. Substantial motel discount on reservations made through me by virtue of my (W2WIY) status as a local resident. Flea market and luncheon Saturday. Planned luncheon speaker: Gene Black, W2LL, on the life of today's marine operator.

Reservations for dinner on Friday or lunch on Saturday must be made in advance. For details of the weekend, send an SASE to: John (Hammie) Richardt, W2WIY, 94 Bald Eagle, Hackettstown, NJ 07840, 201-852-3475. Map in the next OTB.

MINNESOTA MEET

Friday-Saturday, May 18-19

The Northland Antique Radio Club will present "Radio Daze '90" with AWA at the Hotel Seville, 8151 Bridge Rd., Bloomington, MN 55431. Swapmeet, programs, contest, luncheon. For more

(Continued on p. 44)

AWA AWARD LISTING

MEMORIAL AWARDS

YEAR	TYNE TUBE	ELLE CRAFTSMAN	THOMPSON BEST/SHOW
1980	Patrick Dowd	Alan Douglas	-
1981	John Stokes	Bob McIntyre	-
1982	Lauren Peckham	Lincoln Cundall	-
1983	William Condon	-	Ralph Muchow
1984	-	Mike Katzdorn	J. & F. Kreuzer
1985	-	Ross Smith	Lauren Peckham
1986	Alan Douglas	A. C. Stoddard	Alan Douglas
1987	-	-	J. & F. Kreuzer
1988	Bill Orr	Bob Murray	Michael Payne
1989	-	Billy Richardson	Floyd Jury

TRANSMITTER CONTEST, AWA HOUCK, AND MATLACK AWARDS

YEAR	CUNDALL OT	AWA HOUCK - DOCUMENTATION	AWA HOUCK - PRESERVATION	MATLACK
1971	W2LV	Thorn Mayes	-	-
1972	W2LV	Bruce Kelley	Ed Raser	-
1973	W2LV	Gerald Tyne	Robert Merriam	-
1974	W2LV& W0TRF	Lou Moreau	Warren Green	-
1975	W1DM	William Breniman	Stuart Davis	-
1976	W1DM	Howard Schrader	Wayne Nelson	-
1977	W1DM	Ralph Williams	Vance Phillips	-
1978	K4TS	Don deNeuf	Lauren Peckham	-
1979	W1DM	Ivan Coggeshall	Joseph Pavek	-
1980	W2LV	Lloyd Espenschied	Ralph Muchow	William Shaw
1981	K4TS	Alan Douglas	John Caperton	-
1982	K4TS	-	Fred Hammond	John Haught
1983	W2LV	Kaye Weedon	Patrick Dowd	Bill Hurni
1984	K4TS	Floyd Paul	Rex Matlack	A. C. Stoddard
1985	K4TS	Hugh Aitken	Ralph Williams	-
1986	W8VSK	Bill Fizette	-	James Miller
1987	W2BJI	John Nagle	-	John Rollins
1988	W1YG	Don Patterson	Bob Lozier	John Rollins & Marshall Etter
1989	W2VDI	Bob Morris	Bruce Kelley	Neil Wiegand

TAYLOR AND DISPLAY AWARDS

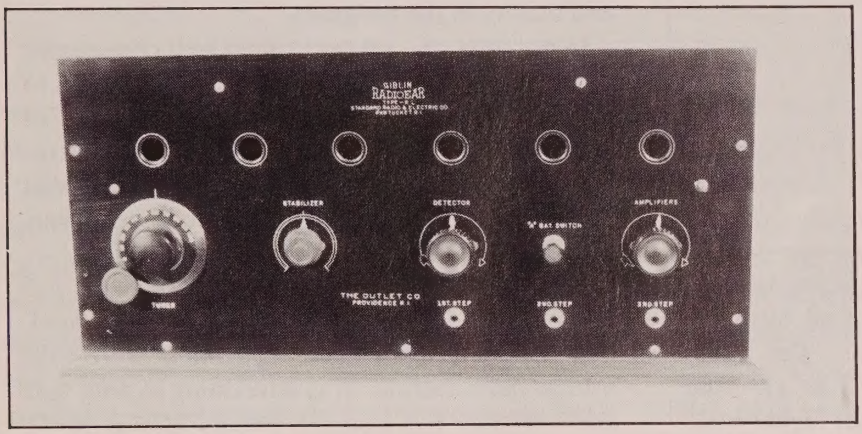
YEAR	TAYLOR	DISPLAY
1985	Ken McIntosh	-
1986	Dick Brewster	Franz Mock/John Glisson
1987	Edmund Taylor	Max de Henseler
1988	Stephen Hofer	Bill Fizette
1989	Peter Yanczer	Robert Lozier

Awards are presented on the following bases: **Tyne Tube**, presented in honor of Gerald Tyne, for contributions to preserving or documenting the history of tube technology; **Elle Craftsman**, given in memory of Bruce Elle, W2VTR, to recognize a constructor of high-quality communications equipment of old or new type; **Thompson Best of Show**, in honor of early amateur Eunice Thompson, W1MPP, for an entry in the equipment contest at the Annual Conference; **Cundall Old-Time Contest**, in honor of Lincoln Cundall, W2LC, recognizing the winner of the AWA old-time CW contest; **AWA Houck - Documentation** and - **Preservation**, presented in honor of Harry Houck, associate of Edwin Armstrong, for achievement in documenting radio development/history or in collecting/documenting radio artifacts on a noncommercial basis respectively; **Matlack**, given, via support of Rex Matlack, W3CFC, for excellence in constructing or restoring amateur equipment; **Taylor**, awarded in memory of John Taylor, RCA television developer, for preserving television history; **Display**, presented to recognize quality and informational value in an exhibit at the equipment contest at the Annual Conference.

THOMAS P. GIBLIN AND HIS RADIOEAR MODEL RL

Leonard Arzoomanian
61 Columbus Ave., North Providence, RI 02911

On July 12, 1924 the New York World had an article on a new broadcast receiver, the Giblin Radioear Model RL with loop antenna. The article explained that, true to a prediction of Major Armstrong, here was a set that did not require an outside antenna for good DX reception.

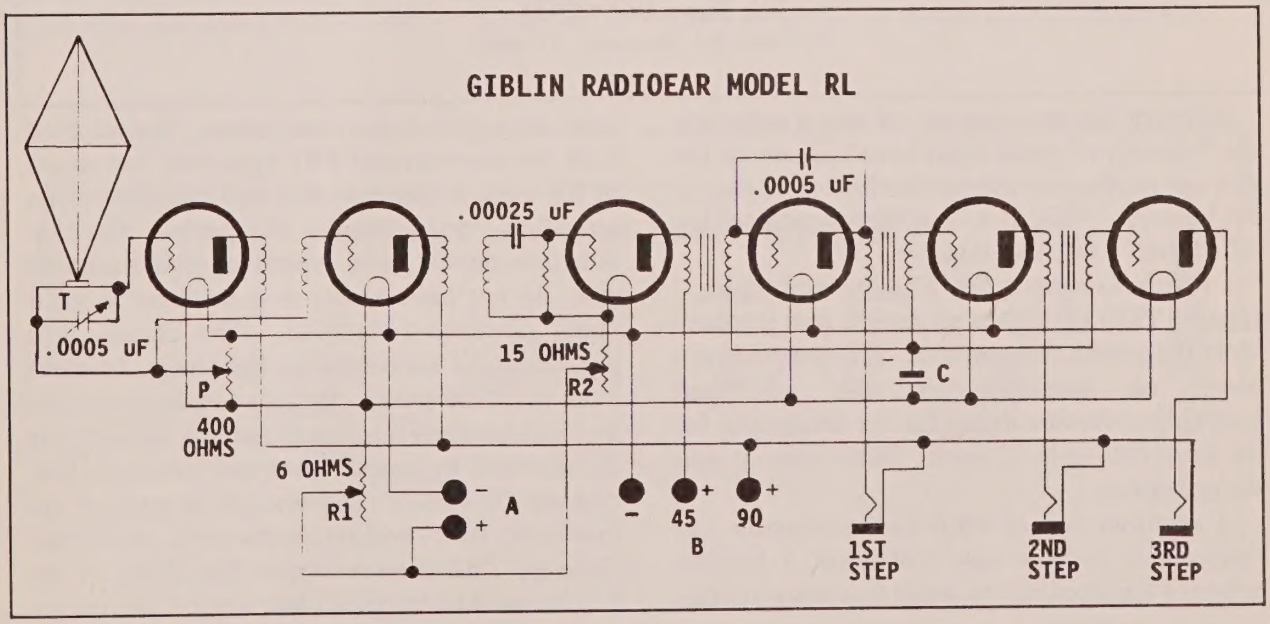


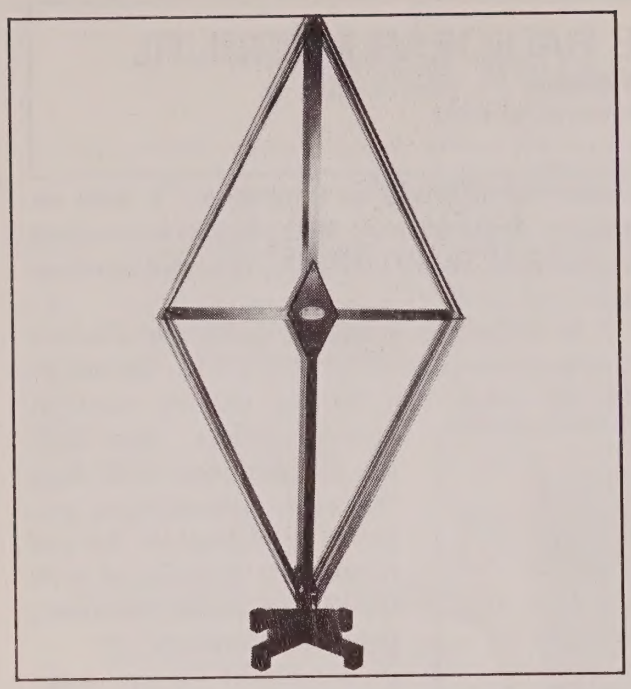
Thomas P. Giblin was a radio engineer from Pawtucket, Rhode Island. He graduated from Pratt Institute in 1912 and was the holder of a dozen patents in the automotive and electrical fields. During the 1920s he owned and operated the Giblin Radio Company and the Standard Radio and Electric Company. He was the (disputed) inventor of the honeycomb coil, and in 1919 his firm was commissioned to improve the coils to be used in the NC-4 transatlantic flight. The Providence Journal claimed at the time that this native son was responsible for the "vital accuracy of the wireless receiving instruments and the proper functioning of the radio compass." He was also the first chief engineer of radio station WJAR in Providence. It went on the air September 6, 1922 with a transmitter rumored to be Mr. Giblin's converted amateur set.

In 1924, the Standard Radio and Electric Company introduced the Model RL. The ads of the day claim that this set did not need an outside antenna. Now families in apartments could hear "enjoyable, everchanging programs throughout the day and evening by 'listening-in' with the Giblin Radio Frequency Broadcast Receiver."

The Model RL uses a six-tube circuit. The handsome loop consists of 120 feet of braided enameled wire wound in 12 horizontally spaced turns on a wood form. This was a different method than in the vertically wound pancake loop, and was said to be able to receive more signal energy. A .005-uF variable condenser was placed directly across the loop to tune it. In testing the set, I found that the loop was as directional as it should be, with 90- and 180-degree turns from the "best" position resulting in a marked decrease in volume as well as an increase in interference.

There are two RF stages, a detector, and three audio stages. All the coils in the set were made by the Giblin Electric Company. The RF coils are of the air-wound type and are designed for the 250-550 meter (550-1500 kHz) broadcast range. I found that even the first audio stage was





powerful enough to drive a horn speaker with today's signal levels, and that use of all three resulted in excessive volume levels. The audio transformers are of a low ratio (3 to 1). The World article states (justifiably) that higher-ratio coils would result in increased distortion.

The set requires A, B, and C batteries. The review of the set in the World stated that the B(s) should be 22-1/2 and 45 volts, with a C-battery of 1 volt. Higher voltages could be used on the B as long as a proportional increase was made in the C. In testing the set, I found that a 45- and 90-volt B and a 2-3 volt C battery resulted in proper operation. Being able to adjust the C voltage on a battery eliminator enabled me to reduce the distortion in the audio greatly. This, unfortunately, was not an option for the original owners!

Tuning of the set is very easy. A Stabilizer control (P) is turned to the counter-clockwise position. The Amplifier control (R1) is then turned about three-fourths clockwise. This lights the two RF and three audio stage filaments. At this point, turning the Detector control (R2) clockwise results in a loud regenerative hiss. When this hiss is heard, the detector control should be turned back until the hiss is gone. Stations can now be tuned on the TRF dial (T). When a station is found, adjustment of the stabilizer and positioning of the loop result in increased volume and quality in the program.

In my tests, the set performed well considering the situation. I was able on a first attempt to pick up five local stations down in the cellar of my house. The tuning has a very narrow separation enabling stations close together on the dial to be tuned in easily without interference. Overall it is a well built, good performer.

One additional item: The set pictured has "The Outlet Company" engraved on the panel. This company was a local department store with a large radio section. It is interesting to note that this company was also the owners of WJAR. It seems that Outlet and Mr. Giblin were creating a market for the receivers by opening the station!

Thanks go out to Alan Douglas and Charlie Harris for their help in obtaining information. References covering the Giblin story are: New York World, 7/12/24, "Giblin 6-Tube R.F. Circuit"; Radio Progress, 3/15/24 and 4/01/25, Giblin Radio Apparatus ads; Providence Journal, 9/30/19, "Providence Man Aids NC-4 Trip," 9/28/22, "Providence To Have Powerful New Radio Station, WJAR," and 3/18/63, "Thomas P. Giblin, Designer, Dies."

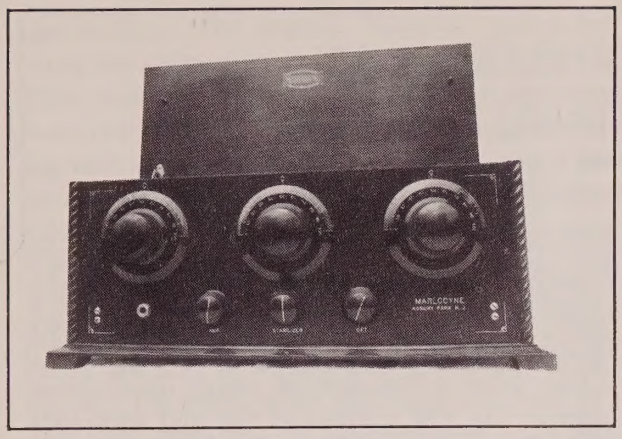
THE MARLODYNE - A MAN AND HIS RADIO

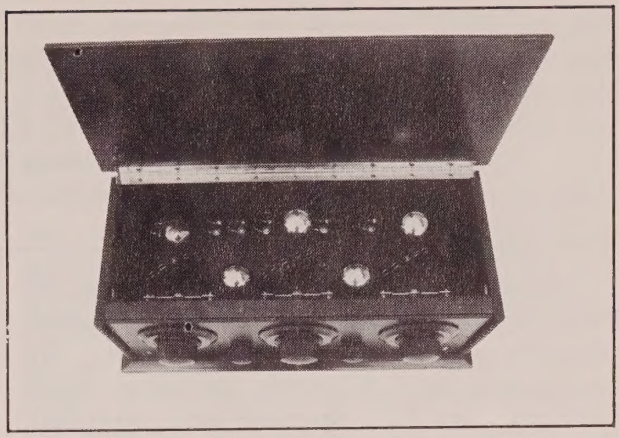
Bob Haworth, W2PUA
112 Tilford Rd., Somerdale, NJ 08083

Although the exact number of sets is unknown, the "Marlodyne" radio must have had one of the shortest production runs in the history of the radio business. This, at a time when anything that called itself a radio was salable.

Ralph Longley's Set Catalog and Index - January 1921-1933 gives an insight into just how short the production run was. His compilation - based on manufacturers who advertised nationally - shows a listing for the Marlodyne for the year 1926 only. The set didn't make it into Rider's either.

I acquired one of these radios recently. In restoring it to "like new" condition, I became aware of the attention to detail that the manufacturer employed in its construction. The set itself is of the conventional TRF type with two stages of RF gain, a detector, and two cascaded audio amplifiers - typical for the 1926 period. The construction details were typical of manufacturers who did not have access to a machine shop or metal fabrication facilities. The chassis is a bakelite sheet supported by right-angle brackets from the front panel. Battery and antenna connections between the chassis and the cabinet rear are provided by jumper wires and terminals, thus making the chassis rigid enough to support the machined tube sockets, capacitors, coils, etc. Coils are basket-weave types like those in the Freshman Masterpiece, but angled to reduce





coupling. Bus-bar construction is used throughout.

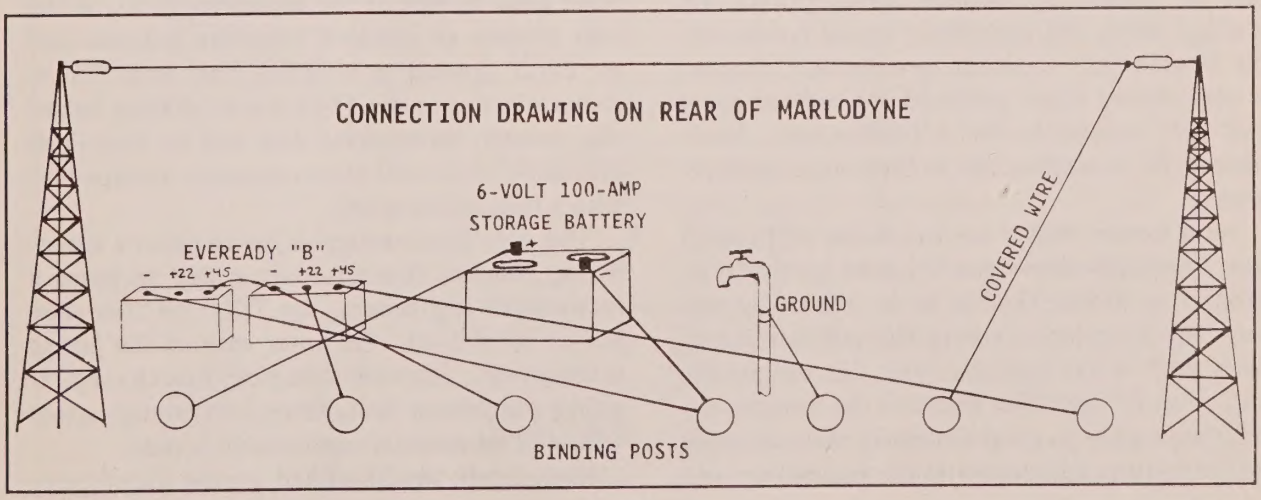
The most interesting part of the construction is the rear of the wood cabinet. The entire rear surface is covered with a blueprint which depicts two triangular radio towers with a leadin to the antenna terminal, with pictorials of all batteries and a water-pipe ground. Seems like a novel way to picture the set connections: the wrong battery hookup could cost you a set of tubes!

As I restored the set, I became interested in determining more about the Ernest Marlow Company since the set was manufactured in Asbury Park, New Jersey - my home state. A letter to the Asbury Park Chamber of Commerce helped fill in some detail. It seems there was no listing for a radio manufacturer at 613 Bangs Avenue - the address on the blueprint of the set. Further, the "old timers" of the Asbury Park area could not recall an Ernest Marlow. Rosemarie Porter of the Chamber of Commerce did graciously provide a few hints, however.

In the early Twenties, references such as Polk's Asbury Park Directory were available. These directories were a miniature Bureau of the Census - although probably more useful. They listed all residents with their addresses, occupations, etc. Rosemarie located the 1924 through 1931 directories and the pieces of the Marlodyne mystery started to fall into place.

It seems the Marlodyne was manufactured by a salesman whose name was Ernest Moberg. In 1926, both he and his brother (or father) did assemble radios in Bradley Beach, New Jersey: not Asbury Park, but close by. By 1928, the two Mobergs ran the Bradley Beach Radio Company but no mention was made of the manufacturing aspect. By 1931, Ernest Moberg's occupation was again listed as a salesman working out of New York City. No mention of his partner or the radio company is made by that time.

My search for the man and his radio ended abruptly with this information - just as the production run of the Marlodyne had done years before. Incidently, the radio operates very well although, typical of TRFs with grid-leak detectors and no AGC, it tends to overload on locals and its lack of selectivity makes it tough to get DX.



RESTORING THE PHILCO 37-60: A TRIP INTO DEJA-VU LAND

Rudy Zenker
365 Hampshire Dr., Clarksville, TN 37043

As any antique-radio restorer knows, his mandate is to use only original parts. He must maintain self-disciplined quality control. No molded-plug vinyl AC cords, transistors, diode rectifiers, or PC modules are permitted. Remember: the operative word is *restore*.

As for me, I go a little bit beyond that; I guess you could call me a purist. Not only do I follow the original-parts rule, but I do troubleshooting with a mint-condition Rider Chanalyst of 1945 vintage. While working, I often tune a cathedral radio to WAMB, Nashville, a "big-band" music station, and listen to Glenn Miller or Tommy Dorsey. Sound kooky? Maybe. But it is a realistic journey into the magic land of deja-vu.

Aside from the esthetic approach of using older test gear to check older radios, I use the Chanalyst because it is a more versatile instrument than most of today's signal tracers. It is also more circuit-compatible. It has a built-in zero-center VTVM, handy for checking negative bias readings without probe-changing or switch-fiddling. It is also equipped with four 6E5 magic-eye tubes for stage-by-stage visual signal tracing in the RF, IF, AF, and oscillator stages, and for measuring wattage consumption. (A wattage check will sometimes reveal power-supply troubles not apparent in resistance checks.) It also checks stage gain and has a front-panel jack for connection to a loudspeaker, headphones, or an oscilloscope to determine audio response.

The Philco Model 37-60 was an interesting project. After refinishing the cabinet, I used paste wax and plenty of elbow grease to impart that high-gloss shine.

As a former Philco service-dealer of 40 years ago, I naturally chose that brand to specialize in. I found the Model 37-60 to be an interesting project. The set contains several "hi-tech" variations, circa 1937. It has only five tubes, but, despite the lack of an RF amplifier ahead of the detector-oscillator, it achieves good sensitivity and selectivity due to circuit refinements in the preselector and converter. Each stage contains two tunable transformers (see diagram) with compensators. By contrast, my five-tube Philco Model 60 (1933) suffers from a bad case of image interference. My city has AM stations at 540 and 1400 kHz. The local oscillator in the Model 60 beats with the 540-kHz station to form the 460-kHz IF as the difference frequency, but it also brings in an interfering signal at 1460 kHz, the image frequency. The receiver response is broad enough to accept the station at 1400.

The Philco 37-60 uses an IF of 470 kHz and employs a separate RF component deck, isolated from the main chassis by rubber grommets, to eliminate hum and stray RF feedback. This deck houses the detector-oscillator stage with the 6A8G tube, tuning condenser, antenna and oscillator coils for each tuning range, selector switch, compensating condensers for all coils, and all other RF parts. An external "All-Wave Aerial Tuning System," forerunner of the built-in Philco loop circa 1939, is coupled to the receiver chassis through four screw terminals on the rear apron. This enables coverage of the 2.3-4.7 MHz police-shortwave band as well as the broadcast band. If the user prefers an outdoor long-wire antenna and an earth ground, a shorting link is available. Other niceties in the 37-60 are a "glowing beam" dial pointer, direct-drive dial, and an eight-inch adjustable-voice-coil electrodynamic loudspeaker with a hum-bucking coil.

The only disadvantage is an engineer's space-saving gimmick that no doubt ended up being a repairman's nightmare: the 5Y4G rectifier tube socket is built into the outer case of the power transformer. The tube then plugs into the top. If either component fails, there isn't enough space to mount an external replacement socket.

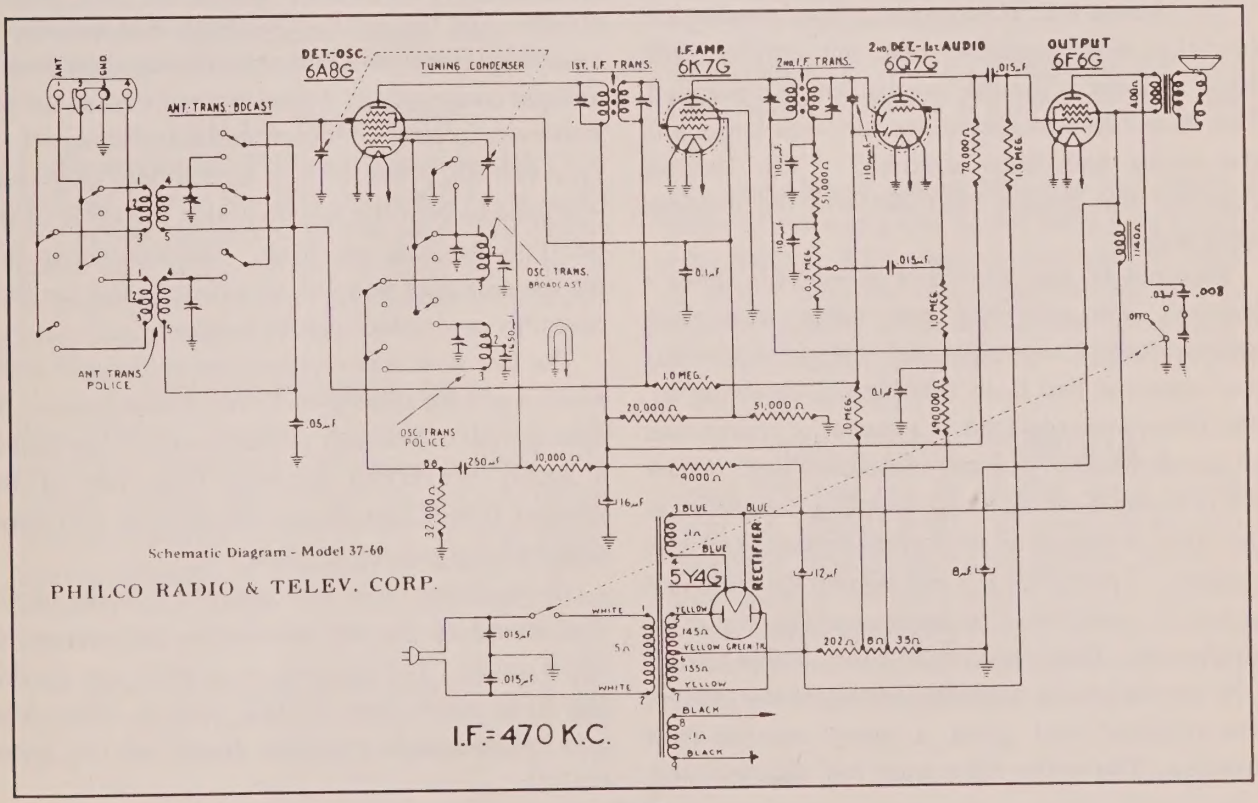
Fortunately, my 37-60 had a good transformer

and socket. The cabinet, however, had a few scratches and cracks in the veneer. A matching filler took care of the cracks and the scratches were easily covered by stain. A light spot-sanding with a sheet of 400-grit wet-or-dry paper immersed in linseed oil followed. I next applied a diluted coat of cabinet-rubbing varnish, topping this off with another light rubbing, this time with a mixture of rottenstone and water to impart a high-gloss finish. (Pumice powder may be substituted, but may be a little harsh. For a satin finish, mix the rottenstone with light machine oil.) The final touch was an application of paste wax, using an old T-shirt and plenty of elbow grease. Furniture in the late '30s and '40s made extensive use of varied wood-grain inlays. The 37-60, with its light oak-grain veneer front panel blending into the walnut cabinet, is no exception.

The 37-60's dial and loudspeaker presented some problems. The dial numerals were worn off and the speaker had an open field coil. The usual approach would be to install an eight-inch PM speaker and a power supply choke as replacements. Simple enough. But, you guessed it, that would be compromising my standards. There was also the practical side: little room to mount the choke. Besides, what good is a pretty amber dial with nothing on it? So I began to shop around, by phone and mail. It paid off. A dealer in Maryland had a Philco 37-60 with a cabinet that looked like it had lain in a damp basement for years; the base had begun to fall away. But the dial was intact and the speaker was good. Not only that, but I could see the advantage in having a spare transformer with that crazy tube socket. My Maryland friend was getting nowhere with his moldy cabinet, so I was overjoyed when he agreed to sell the radio. He was most helpful and gracious, indicating that "one of us may as well have a good 37-60."

After tubing up, replacing the defective speaker and dial, installing reformed can-type electrolytics, changing-out three paper tubulars, and touching up the alignment, the 37-60 performed as if it had just left the assembly line! Even without an outdoor antenna or the Philco loop (I used a 15-foot length of insulated wire tossed on the floor for an antenna), the selectivity and sensitivity of the 37-60 are outstanding. Hum is virtually non-existent. The bass response is impressive, with three watts of undistorted power output coming from a 6F6G pentode.

At the 1937 price of just under $75, the Philco 37-60 was a bargain for its time. (I have about $150 wrapped up in mine.) Depending upon whose antique mall you visit today, a restored set of this quality commands six times the original asking price. America has a nostalgic romance with the cathedral radio, as sales of the GE and Thomas reproductions are proving. The years 1937 and 1938 were, in my opinion, the peak years of vintage radio, not only from the standpoint of receiver design, but also from the diversified entertainment sources. With the invention of "loktal" and "GT" tubes (1938-39), the trend toward smaller sets was on. When printed circuits, transistors, and television ushered in the '50s, radio became relegated to mobile or portable use . . . Except for us old timers who experience deja-vu.



ZENITH MODEL 6S229

Fred Linn, W9NZF

5608 Edgewater Dr., Cedarburg, WI 55301

I found this table-model Zenith in an "antique warehouse" underneath some old woodwork, doors, and the other debris so familiar to antique snoopers. It is a rather large "tombstone," and has (had) a decal finish over its 1930s plywood cabinet. Fortunately, it had been protected from demolition by a heavy door bridged over the top.

The chassis was in surprisingly good mechanical condition with negligible rust, but covered with straw and dirt. The dial mechanism was jammed. The drive belt was glazed, its idler was loose, and the spring had been stretched. The variable capacitor was loaded with dirt and the bearings were frozen.

Fortunately, the electronics showed life (after a fashion), and with two new tubes, it worked, although out of alignment and calibration showing that someone had been fiddling before giving up. The filters were replaced as a matter of course, and all circuit voltages checked reasonably well. I took the precaution of replacing coupling capacitors in the audio string so as to prevent leakage and bias changes. I tuned the IFs and aligned the front end as well as could be done before tackling the drive mechanism. This proved to be a formidable task.

No new drive belt could be located, so the old one was repaired and given a spray coat of belt dressing. The entire drive train was disassembled, bearings cleaned, shafts polished, gears regreased, and the dial plate remounted (it had come loose from its mount). The condenser mounts were long since dried up, and had to be changed. The old sponge-rubber units were replaced; substitutes made from rubber grommets worked very well.

The belt-drive mechanism is held in alignment by two crowned pulleys and an idler, spring-loaded to take up the slack. This idler was on the wrong side of the belt and the spring had been stretched to accomodate the "new" spacing. I wound a new spring and repositioned the idler.

Since all components had been replaced-repositioned-remounted, naturally, the dial calibration was badly off. Quite a bit of time went into getting the calibration to be satisfactory, although not perfect at the scale ends. Fortunately, the dial glass was intact, the round black dial was in excellent condition, and both pointers were undamaged. The entire assembly runs very smoothly, and does not slop or hesitate.

The cabinet exterior was washed with warm water and Woolite. The "dings" in the decal surface were filled with a matching Weldwood Putty Stick, and the entire surface received a coat of furniture cream. The top of the tombstone was apparently assembled from different wood pieces - common in antique construction. I steel-wooled this, as the old finish was in poor condition and was flaking off. A satin varnish, preceded by a light walnut stain coat, was used to coat the top, to match the color of the decal on the sides and front. The escutcheon ring for the dial glass was OK as received, and the final assembly proceeded without incident.

The last item was replacement of the grill cloth, which had long since gone to meet its ancestors. In anticipation of this sort of emergency, I had laid in a supply of various patterns from one of the vendors at the Canandaigua flea market; also some, with a Philco pattern, at Elgin.

The restored radio is as you see it in the photo. The sound of the old speaker is reminiscent of 1930s audio. The receiver is in daily use, playing Big Band music from WOKY here in Milwaukee, and really sounds nostalgic (name of the game, ain'a?).

HINTS ON IDENTIFYING BROADCAST RECEIVERS

RCA VICTOR PRODUCT CODE

Ted Hannah, K3CL

I just came across a handy way to identify various kinds of RCA Victor radios and other products made during the late '30s and early '40s. The key is the letter or letters used in the model numbers, in much the same way as Zenith identified its receivers. The system is:

BT - Battery table receiver
BP - Battery portable
CV - Converter
K - Console
O - Portable Victrola
OSC - Oscillator
Q - Export table
QK - Export console
R - Record player
RK - Record kit
RR - Record cabinet
T - AC table
TT - Television table attachment
TRK - Television-radio console
U - Radio-Victrola
V - Radio-Victrola
VA - Wireless record player
VHR - Home recording radio-Victrola
X - AC-DC table

Though it's not on this list, "M" apparently identified automobile receivers. The source for all of this is RCA Victor Service Data, revised and abridged, Volume II, 1938-1942, p. 814-C.

PHILCO DATE CODE

Philco sets for the 1937 model year and later carried the year as the first two numbers, e. g., the 37-116 was introduced late in 1936. This system lasted until 1953. Afterward letters came in: B through G covered the 1954 through 1960 model years respectively. [-LAS]

ZENITH PRODUCT CODE

Joe Koester revealed a useful item in the MAARC Newsletter OF January, 1989: the Zenith coding system for its prewar radios. Source material was Vol. III of the Zenith Service Manual, as provided by MAARC-AWA member Arie Breed. Further investigation has extended the code to radios up to about 1949.

The system is **number-letter-number**. The first number is the quantity of tubes. The letter designates the chassis design, as listed below. The second number indicates the model year: 00-series, 1936; 100- through 600-series, 1937 through 1942 respectively; 000-, 1946-47; 700-, some 1947 sets; 800-, 1948, 900-series, 1949. (Postwar numbering is based on looking up some sets in Sams' Photofacts.)

The letter code is as follows:

A - AC only, all-wave
B - Farm battery, 6-volt
D - AC-DC, 110-volt
F - Farm battery, 2-volt
G - Portable, batt. pack or 110-V AC-DC
H - AC only, FM
J - 110-volt AC or 6-volt DC
K - Battery pack, farm and portable
L - Long-wave and broadcast
M - Automobile
P - AC only, police and broadcast
R - AC-DC BC chassis with 60-Hz phono
S - AC only, broadcast and short wave
T - AC only
U - AC only, BC, SW and ultra-SW
V - Farm, 6-volt (replaced by "B"?)
X - Farm, 32-volt

Some models carried a suffix letter, which often denoted only a minor variation. More significant suffixes were:

A - All-voltage 25-Hz type
B - All-voltage 50/60-Hz type
C - 95/117/150-V 50/60-Hz

As examples, the 7D241 is a 7-tube AC-DC set of 1938 model; 10S669 is a 10-tube, BC-SW, 1942 model.

For single-brand automobile sets, the intended make of car was given by, for early sets, a suffix after the rest of the code, for example the 7M91S of 1936. Later car radios showed this information by a letter after the M, like the 6MF590 (Ford), 7ML592 (Lincoln), or 7MN596 (Nash) from 1941. [-LAS]

DATES FROM "CONELRAD"

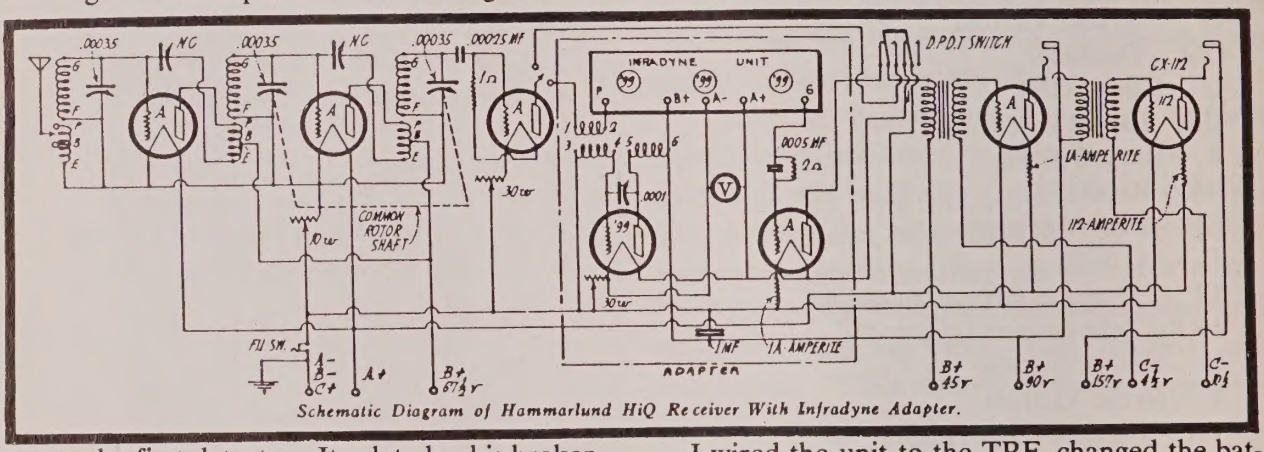
Later AM sets can be roughly dated on-sight from the CONELRAD ("CONtrol of ELectromagnetic RADiation") civil-defense marks on their dials at the 640- and 1240-kHz positions. These began appearing on production receivers in early 1954, were well established by the end of 1955, and began disappearing about 1961.
[-LAS]

MEET THE COLLECTORS

Rodney Schrock, KD3OR
402 Lincoln St., Somerset, PA 15501

THE INFRADYNE ADAPTOR

Having built a very successful Infradyne (see OTB, Vol. 21 No. 4, March 1981), I decided to try an Infradyne adaptor as detailed in at least two issues of "Radio": October 1926 and February 1927. Of the two, the 1927 article goes into greater detail regarding the construction and wiring of an adaptor which is inserted into the existing wiring of a single-dial TRF set and which converts it into an Infradyne with the traditional 3.2-MHz IF. The TRF RF stages are used as the RF stages of our superhet. The existing detector acts as the first detector. Its plate lead is broken, connected to the adaptor, where it goes through a mixer coil where it receives the signal from a tunable local oscillator. The resulting IF is amplified by the Remler No. 700 IF amp, and demodulated by a second detector whose plate lead is connected to the existing detector plate lead of the TRF set. The article cites the Hammarlund Hi-Q and the Counterphase Power Six and Silver Six as examples of suitable conversions.



Schematic Diagram of Hammarlund HiQ Receiver With Infradyne Adapter.

Not having a suitable set for modification, I decided to do the next best thing: convert a battered Radiola to battery operation . . . in other words, change a Radiola 17 to a 16. I did this by rewiring the filament circuits for battery operation: changing the five-pin detector socket to four, connecting the RF and detector tubes to one rheostat, and wiring the audios to another.

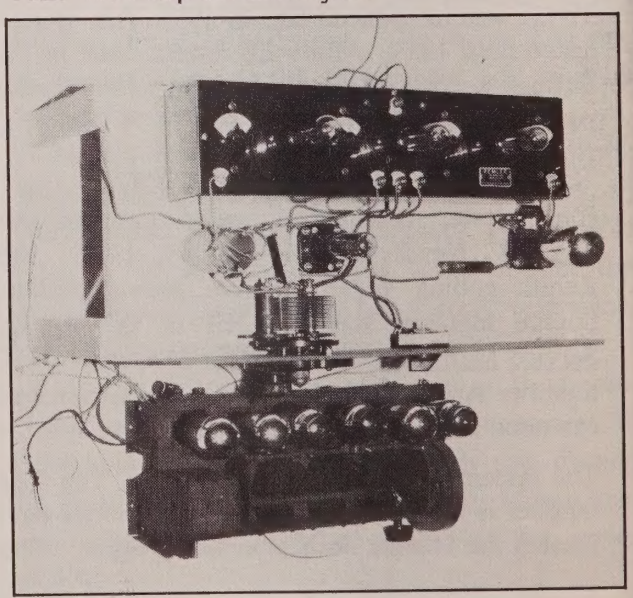
I divided the B+ circuits, using 90 volts on the RF and first audio plates, 45 on the detector plate, 135 on the power amp and -9 on its grid. Of course, I changed all the tubes to 01As. I added 1-uF bypass condensers where I thought they would do the most good; inserted tubes; connected batteries, antenna, ground, and speaker; and fired up.

The result was a very stable, decent radio which performed as well as or better than it did on AC. I would imagine a lot of Radiola 16s were converted to AC operation, but I wonder how many 17s were converted for battery use?

Since wire placement is critical in the Infradyne, I decided to go strictly "by the book," using the photo in the February 1927 issue and also referring to August 1926 for more detail. The latter article shows construction of a complete set. Instead of the specified 1000-pF variable condenser, I used 500 and changed the number of turns on the oscillator coil to 20.

I wired the unit to the TRF, changed the battery connections, and tried my creation. The performance was "OK." The arrangement was stable, very sensitive and needed only a short antenna to perform well. With the bypass capacitors, I didn't have the TRF effect where signals leaked past the IF unit and ended up in the audio. But the set didn't have the razor-sharp selectivity of the 1981 Infradyne.

Take my advice, find all the components and build the complete Infradyne!



THE VACUUM TUBE

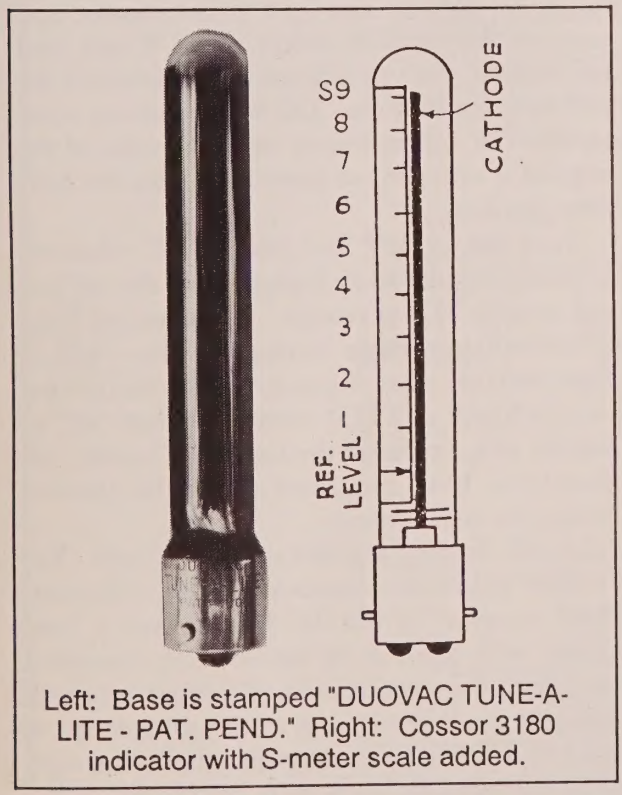
EDITED BY
BRO. PATRICK DOWD, F.S.C.,
W2GK

TUNE-A-LITE

The use of a meter to indicate correct tuning of a broadcast receiver has been with us for 55 years or so, for example, the "shadowgraph" tuning meter of the 1930s. The "Magic Eye" tube is well known. There was, however, another type of tuning indicator that is almost forgotten: the "Tune-A-Lite."

The Magic Eye (the 6E5, 2E5, 6G5, 6T5, 6U5, etc.) was very popular in broadcast sets in the mid-to-late Thirties. The circuit was relatively simple; the "eye" narrowed in response to high AVC voltage, making for easy tuning. The same tubes were later used in capacitor checkers, audio recorders, etc. Collectors find little trouble in replacing eye tubes in restoring an old set.

The device that was short-lived in the U. S. and now difficult to replace is the neon tuning indicator. Its maker, Duovac, introduced it in a one-shot ad in the July, 1931 issue of "Electronics." Duovac called it the "Tune-A-Lite." Atwater Kent adopted it and promoted it heavily as the "Tonebeam"; it was also known as the "Flashograph." AK used it in its top-of-the-line sets, ca. 1932-33: Models 96, 99, 260, 469, 480, 612 and 812. Rider's Volume 3 covers these sets. The indicator was a conspicuous part of the dial bezel, and must have set these receivers apart in the showroom through its distinctive neon glow.

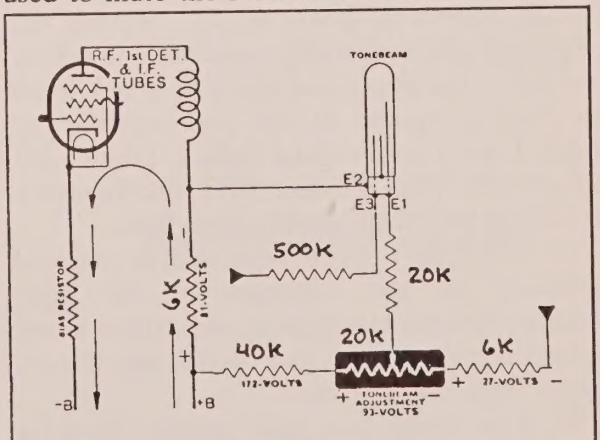


Left: Base is stamped "DUOVAC TUNE-A-LITE - PAT. PEND." Right: Cossor 3180 indicator with S-meter scale added.

The bulb itself is a slender glass tube 3-1/2" in length and 1/2" in diameter with bayonet base. The display acts like a thermometer: the greater the voltage applied to the terminals, the higher the column of light. The variable voltage was derived from the variable plate currents of the IF and RF tubes that were controlled by the AVC voltage. The earliest bulbs had two electrodes; three in the later ones. There was a bias adjustment to set basic operating voltage for the indicator (see circuit).

The device did not survive long in the U. S.; no AK set in Rider's Vol. 4 has it. Neon tubes, including modern ones, do not last well with DC excitation; apparently the constant sputtering of the anode harms their life. The early two-electrode tube in the photo shows heavy blackening from use.

A four-electrode version was invented, and was described in "Electronics" for February 1933. Its feature was that the extra electrode could be used to mute the receiver when tuned between



Tonebeam circuit in AK Model 812.

(Continued on p. 30)

RESTORING OLD EQUIPMENT

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CIRCUIT RESTORATION

BY THE HIGH-IMPEDANCE POWER SUPPLY METHOD

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The idea presented here is to use a special B+ supply to "jump start" a radio into operation: a high-impedance variable source that can absorb the effects of short circuits in the radio under test without damage. With the supply and the step-by-step procedure below, it is possible to clear troubles without risking the power transformer or rectifier tube in the set. The next page shows three convenient ways to build such a supply. Our thanks to the Indiana Historical Radio Society "Bulletin" for permission to use this story. It deserves wide notice!

1. Remove chassis and speaker from cabinet. Remove tubes from chassis, clean it and replace bad tubes.

2. Clean and oil ground springs and bearings in the variable capacitor to eliminate noise. Clean variable resistors with control cleaner or TV-tuner cleaner. Oil all bearings on controls, tuning dials and switches; being careful not to spill oil on friction drives or dial cords. If dial cords slip, rub them with rosin or tighten the holding spring. Clean switch wafers on both sides and clean the interiors of all switches with contact cleaner or TV-tuner cleaner.

3. With all tubes out, turn the chassis over with the speaker connected and apply voltage from the high-impedance power supply. Negative will be ground on power-transformer sets and will be one side of the power-line switch (turn switch on) for floating-negative AC-DC sets with the AC line isolated from the metal chassis. Positive will be a red wire from the electrolytic filter capacitor or pin 3 of the (octal) power-output tube.

4. Watch for a short-circuit and/or overload condition on the voltmeter of the high-impedance power supply (i. e., the red line shows a dead short). Isolate and correct any shorted circuit, capacitor, coil, etc.

5. After shorts have been cleared, check for open circuits. With the high-impedance power supply connected, check voltage on tube-socket pins. A tube manual can be used to identify "live" pins if a schematic is not available. At this stage, tubes will not be pulling current, so pins fed from series dropping resistors will show full voltage. Remove the power supply and check all grid returns by continuity to the negative bus, by testing from grid caps, tube socket pins or variable-capacitor grid connections. Older sets without automatic volume control will have low resistance. AVC circuits may show as high as three megohms. Open grid returns must be repaired before proceeding to Step 6.

6. After Steps 4 and 5 have been cleared, plug tubes back into the set. For power-transformer sets, leave the rectifier out. Plug the set into the 117-volt AC line. Check to see if all tubes and pilot lights "light up" and check for proper heater voltage. Check both sides of the high voltage transformer winding. *(Caution: High voltage; shock hazard.)* Set an AC voltmeter on the 1000-volt scale, connect one lead to the chassis, and measure the rectifier socket pins. If only one side is good, you can still use the transformer for half-wave rectification. This will require an input capacitor of approximately twice the value of the original in order to cut down hum from the half-wave rectifier.

Turn the set "off" and place a DC voltmeter from chassis ground to B-plus. Turn the set "on" and monitor B-plus voltage. If it does not build up immediately with a filament rectifier (such as Type 80) or after warmup on a heater-type rectifier (such as 25Z5), turn the switch "off" or pull the plug and trace the trouble. Caution: all electrolytic filter capacitors should be checked before this step is taken.

Use the floating negative on AC-DC sets. The rectifier will be the slow-heating type. *(Caution: shock hazard)*. A few AC-DC sets use a "hot" chassis with one side of the AC line connected directly to the metal chassis. To avoid the shock hazard connect the chassis to the ground side of the 117-volt line by turning the plug to the right position. A small neon bulb will tell you if the

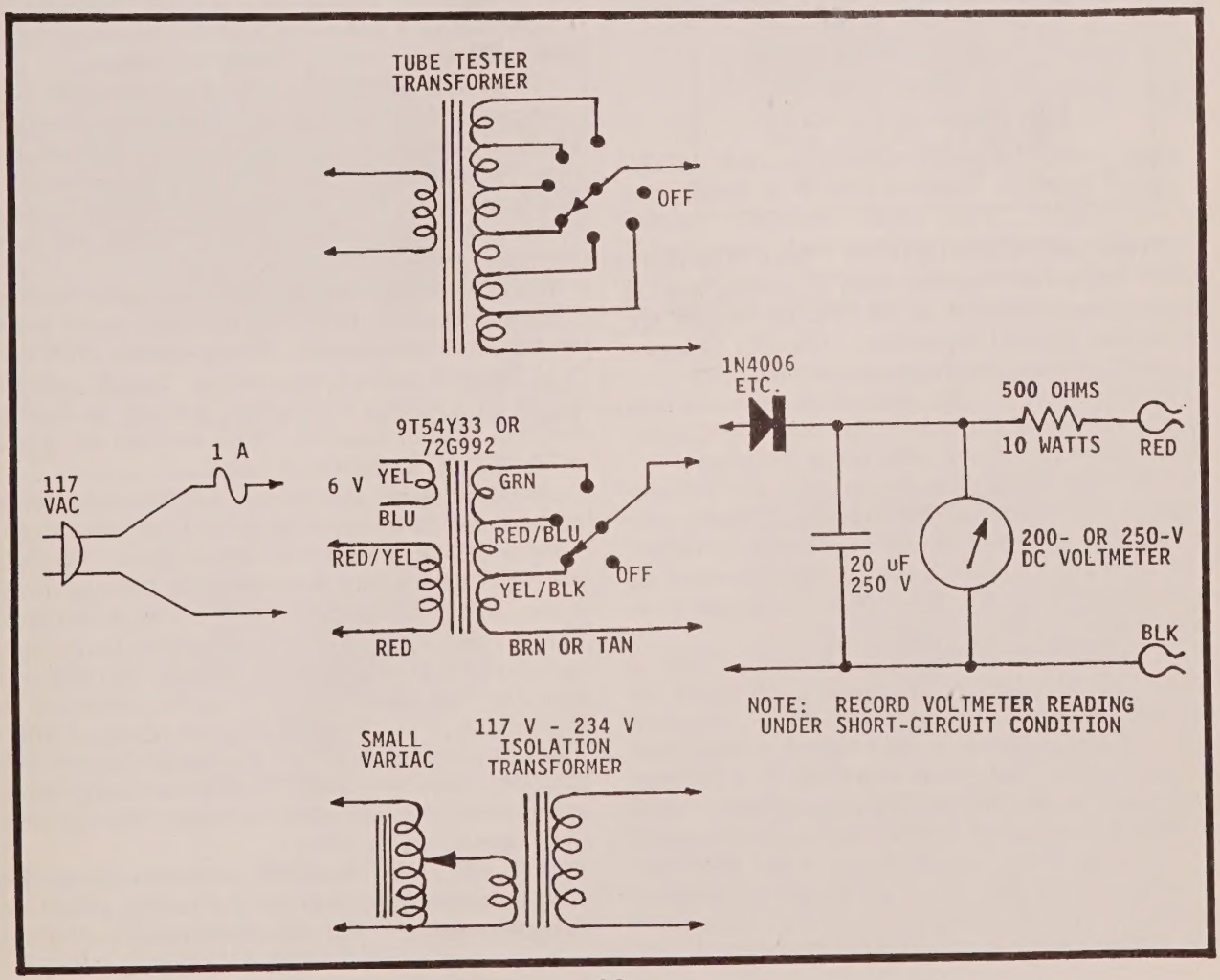
chassis is "hot." In this case the chassis is negative.

7. Recheck voltage on all tube pins as in Step 5 above. This time, with all tubes operating, voltages should be within 15% of specifications on the schematic or voltage chart. Here, again, tube manuals can be used for approximate specifications when schematics are not available. On older superhets with B-plus on the oscillator coil, check for leakage or open windings due to electrolysis. If there is leakage, some or all of the plate voltage will show up on the grid side of the oscillator circuit.

8. If there is no signal on the speaker, check for an open output transformer, open voice coil, or shorted capacitor on the plate of the power tube. If the speaker has a field winding, check for correct DC resistance. If the usual series field winding is open, there will be no B-plus on the tubes. If a parallel field coil is open, sound will be low and there will be no bass response from the speaker. Substituting a PM speaker in the output circuit is a good tool for servicing output problems. If audio transformers are used, check all windings for opens or shorts.

9. Align intermediate-frequency transformers with a signal generator set for the specified IF (usually 175, 262.5, or 455 kHz). For AVC circuits, a high-impedance DC voltmeter connected to the AVC string at the diode detector or the high end of a volume control without blocking capacitor will serve as a good output-peaking meter. Chassis or floating ground will now be positive. Start with the 10-volt scale and go up or down as needed. If the IF signal is strong but broadcast stations do not come in, look for an open oscillator coil or bad capacitors in the oscillator circuit. Now complete the RF alignment, peaking the low-frequency padder and the high-frequency trimmers.

10. For automobile radios with vibrators, follow the above procedures but pull the vibrator out with the tubes. When Steps 1 through 5 have been completed, plug in the tubes but not the vibrator. Supply the six- or twelve-volt DC to the tube heaters and connect the high-impedance power supply to negative ground and B-plus as before. Connect a short wire antenna and operate the set. Complete Steps 7, 8, and 9. With the set now playing OK, turn to the vibrator check. First, check the vibrator on a vibrator tester, then test performance in the radio set. Remember that "drug-store" vibrator testers using AC power will not always detect troubles. Test for a defective buffer capacitor in the power-supply circuit. Replacements should be



rated at 1600 V. Check battery polarity on early six-volt sets using synchronous vibrators - many six-volt automobiles used positive ground.

GENERAL OPERATING NOTES

A. Approximate settings for the high-impedance power supply are 50-67 volts for battery sets, 120-130 for AC-DC sets, 180 for automobile vibrator-type sets and 180-220 for transformer sets. The power supply may also be used as a single-voltage B-plus supply for early battery sets.

B. Obtain a good capacitor checker. Sometimes even new capacitors have excessive leakage or will not form to the specified voltage rating. Electrolytics that have not been charged for a long period sometimes take 10 to 30 minutes or more to form to rated voltage. Watch for excessive temperature. *(Caution: explosion hazard.)* It is better not to use an electrolytic that will not form to rated voltage or whose power factor checks higher that 15%, even if operating voltage in the set is lower.

C. If the set was made before WW II, always replace the electrolytic filter capacitors. On newer sets, test them on a capacitor checker. Sealed metal-can units usually outlast the open cardboard-tube types.

D. If the set was made before WW II, always replace the coupling capacitor (usually .02 uF, 600 V) between the first amplifier plate and the grid of the output tube. This will prevent present and future distortion caused by driving the grid positive from leakage in the capacitor. Check the coupling capacitor on later sets by measuring DC voltage on the grid of the power tube, usually Pin 3 on four-pin triodes and Pin 5 on octal pentodes. Make this check when set has been operating and the capacitor is warm. Maximum DC voltage on the grid should be 0.1 to 0.2.

E. Following the checking of tube pins in Step 5, locate all bypass capacitors that are operating at full B-plus voltage. Replace the brown cardboard types and check round plastic units for correct capacitance and leakage at rated voltage.

F. Low-voltage capacitors in cathode and AVC circuits are usually good. However, if low gain, hum modulation or heterodyning occurs, these may need to be replaced. Always check capacitors visually for deterioration, such as end caps pulling loose. Also look for burned resistors and test fixed wirewound resistors with an ohmmeter.

The writer has enjoyed over 90% "good as new" results from these restoration methods.

IN-HOUSE

Bruce Kelley

EARHART EXPEDITION: Bart Whitehouse, WA0HWP, a new member from Colorado, was radio operator-technician on the "Pacific Nomad" for the Amelia Earhart expedition. His wife Diane, a licensed operator, ran the station at Suva, Fiji.

FIN STEWART: Our Australian tube and lamp historian-collector plans to attend the 1990 Conference, his first return trip after nearly 20 years.

RADIO KNOBS: John Stokes' NZVRS "Bulletin" tells of a New Zealand member, John Danks, who started by collecting knobs from old receivers. With desirable items in short supply, he ended up collecting receivers for the knobs. He is now a receiver collector with 350 sets . . .

880 OPERATORS: Bill Dunbar's "Dots & Dashes" for the Morse Telegraph Club prints interesting material. How about this: Western Union's Chicago office in 1914 occupied two entire building floors. The rooms measured 26 x 212 feet, with positions for 880 Morse telegraphers. They handled an average of 2,327,436 messages a month.

OT CONTEST: A participant in the Old Time Contest said he felt there were almost as many modern T9 signals using semi- or fully automatic keys as there were good old-fashioned vintage rigs. He thoughtfully suggested a contact multiplier of 1.5 for use of a hand key, and 2.0 for transmitters with a T7 or less note . . . hmm, as it were.

END OF AN ERA: Congratulations to Laird Campbell, W1CUT, on his retirement after 35 years of continuous service at ARRL Headquarters. He is the last of the old guard, which included AWA members Roland Bourne, W1ANA; George Grammer, W1DF; By Goodman, W1DX; and John Huntoon, W1RW.

WHITE MOLD ON KNOBS: I've never been entirely successful in removing the white mold found on bakelite radio knobs. Sonny Clutter (NWVRS "Call Letter") tells of his solution: Simply soak the knobs for a couple of hours in ordinary paint thinner (not lacquer thinner). Wipe dry and add a coat of "Armorall" if you wish a finish.

RADAR DX: A radar signal has been sent to probe beneath the opaque smog that conceals the surface of Saturn's largest moon, Titan. The 360-kW signals were sent from NASA's 230-foot Goldstone Lake antenna in California. The faint signals took 2-1/2 hours to return to the Very Large Aperture radio telescope in New Mexico. On this subject, the collapsed 300-foot radio telescope at Greenbank, West Virginia, is being replaced with a 330-foot dish which will be the world's largest fully steerable radio telescope. Now in the design stage, construction will take place between 1991 and 1994, to be operational in 1995.

60-YEAR PIN: The ARRL recently sent me their continuous- membership pin for having joined the League in August 1929. Dues were then only $2.50, and a postage stamp three cents.

COLLECTING LIGHTNING ARRESTERS

Bill Shaw, W2HYN
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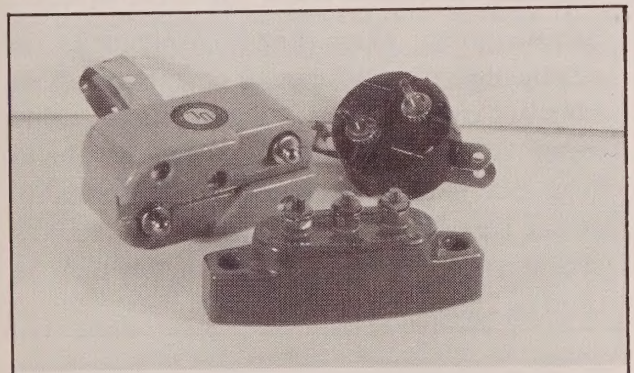
There have been lightning arresters since the first days of radio. The first was a large single-pole-double-throw switch which grounded the antenna when not in use. This simple device was popular until the first days of broadcasting, when early radio listeners with large outside antennas didn't want to bother with a switch.

Most lightning arresters are made of porcelain or glass enclosing two closely spaced elements that form a gap, with one connected to the antenna and the other to ground. They became more sophisticated in time, but performed the same function of carrying high-voltage discharges to ground, saving damage to the receiver.

My collection of arresters is a byproduct of collecting telephone and telegraph insulators at hamfests and flea markets. Without trying too hard, I have amassed 90 types, dating from the 1920s to recent ones designed for TV twinlead. The use of arresters has fallen in recent years, a result of indoor and built-in antennas.

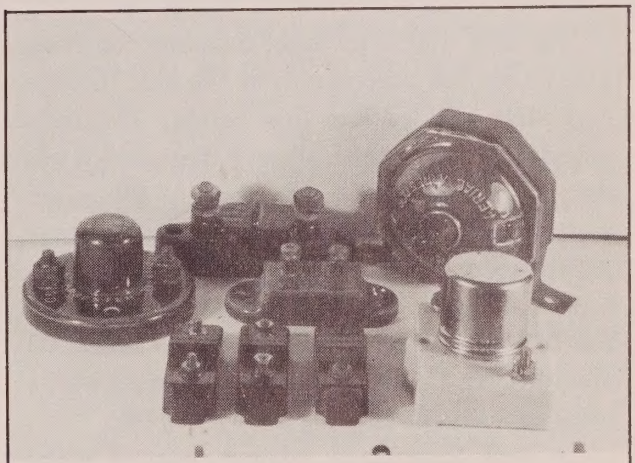
I have at least one arrester under each of the following brand names. Brach is the most popular, with four different types.

Anchor Wire	Electrad	R. S. S.
Arpco	E. S. S. Co.	Safety Jr.
Belden	Fansteel	Sensory
Besco	Fleron	Silvertone
Birnbach	General Electric	Solderall
Blue Grass	Horn	Stern Electric
Brach	JFD	Swan-Haverstick
Channel Master	Knox	Taco
Chicago Radio	Muter	Western Electric
Cook Electric	Parkson	Western Railway
Cornish Wire	Philco	Westinghouse
Corwico	Protecto	Wirt Co.
Eagle	Reco	
Eagle Radio	Royale	

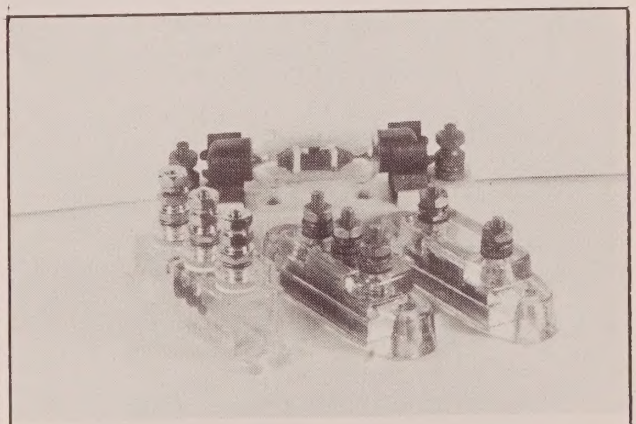


TV arresters. Left: JFD A-F 102. Rear right: "CR." Front: Brach #4004 for 450-ohm open line.

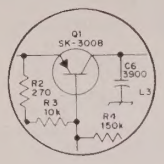
Arresters made by the Swan-Haverstick Co. of Trenton, N.J., to be mounted upright to shed water. Tag reads "Buyer of this lightning arrester guaranteed against loss" (!)



Center rear: Common Knox arrester. Right rear: Early E. S. S. Co. Left: Chicago Radio. Center: Electrad. Right Front: Frost Radio, metal cover over carbon elements. Center front: Brach, Parkson, Blue Grass - same but for names; probably all from Brach.



Rear: Clip-in cartridge, carbon elements in glass, probably Vac-M brand. Left: Fansteel Tantalum Type L-5 with 3 disc elements in transparent liquid; an unusual type. Center: Brach Vis-O-Glo, ANT-GND-ANT leads. Right: Vis-O-Glo with two leads. All glass-enclosed.



TRANSISTOR RECEIVERS

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All correspondence requires SASE for reply

THE MAGNAVOX "INTERCONTINENTAL," MODEL AW 100

Norm Smith

In 1958 transistor-radio technology took a large leap forward with the introduction of multiband radios from several manufacturers. Admiral, Motorola, Philco, RCA, and Zenith were all in competition for this market and produced their own "Trans-Oceanic" type radios. The Magnavox Company in Fort Wayne, Indiana, released the Intercontinental AW 100 as its own entry.

The AW 100 is an eight-transistor superhet with nearly full coverage from 540 kHz through 22.5 MHz, divided into four bands. The technological advance which allowed these radios was the germanium "drift" transistor in the RF, mixer, and oscillator circuits. This device worked over the full normal shortwave frequency range.

This set has a tuned RF amplifier, mixer, and two IF stages, which provide excellent sensitivity and selectivity. Tuning is executed nicely with a large knob and fine-tuning drive assembly.

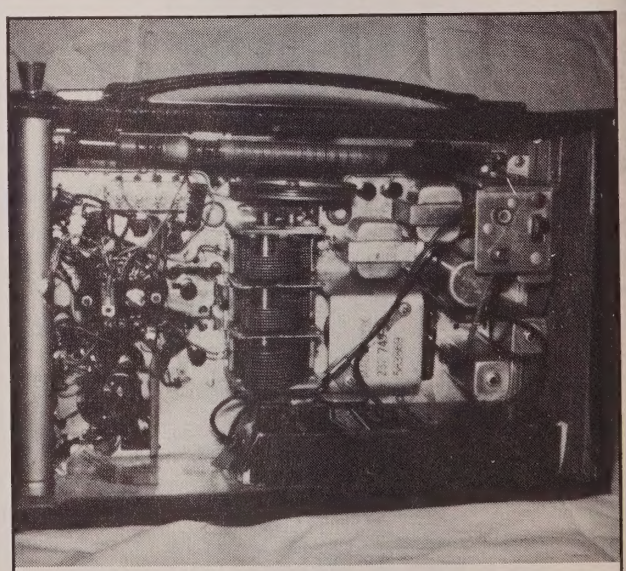
A well constructed weather-resistant metal chassis complements the excellent construction of this receiver. It is hand-wired, with plug-in transistors. The cabinet is made of wood, covered with vinyl, with a very attractive dial, metal speaker grille, and dial escutcheon. The set slips into a matching carrying case of the same materials which also contains the book, charts, and world map to help with SW reception.

The receiver uses nine volts supplied by a large-size battery (Eveready 2506 or equivalent), and is also equipped with a jack for external nine-volt power.

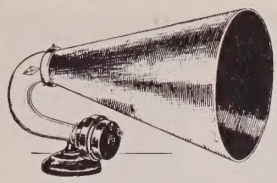
Even though not quite as sensitive as the Zenith Trans-Oceanic, the Magnavox was a very good performer and able to compete with the Zenith quite well. It was smaller, lighter and had more frequency coverage.

The AW 100 and the Zenith Royal 1000 Trans-Oceanic both used the RCA 2N370 family of RF transistors in their front ends. The Zenith divided its frequency range into twice as many bands, giving much better bandspread at sizably higher manufacturing cost, and had an extra audio stage. The AW 100 omitted some minor Trans-Oceanic features like a phono input, but had one more tuned circuit in the IF. Its dial light operated from the 9-volt bus, thus avoiding need for a customized battery pack as used by Zenith.

The AW 100 in its carrying case.



Rear view: triple-gang tuning capacitor, large audio transformers, long-life battery, good-sized speaker.



THE LOUDSPEAKER

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All correspondence requires SASE for reply

COUNTERFEIT OR IMITATION?
MUSIC MASTER vs. MELODY TONE

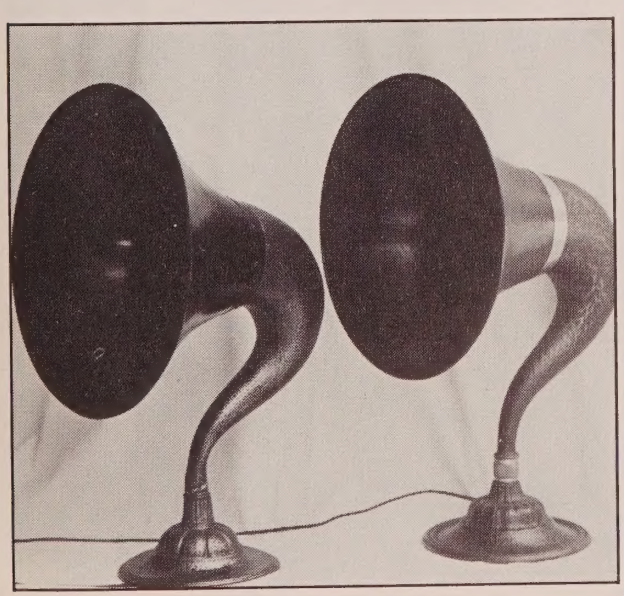
In 1922, the General Radio Corporation started marketing Music Master horn speakers. In about January of 1924, the company changed its name to the Music Master Corp. When the latter went into receivership ca. August of 1926, some 200,000 speakers had been sold. Early Music Master necks and bases were painted black. Later ones were stippled gold and black. The wood bells were made of mahogany (most common), and a few of spruce (scarce). Gold paint was the base color, followed by a light coating of black which shriveled upon drying, allowing gold to show through, creating a stippled or speckled coloring effect.

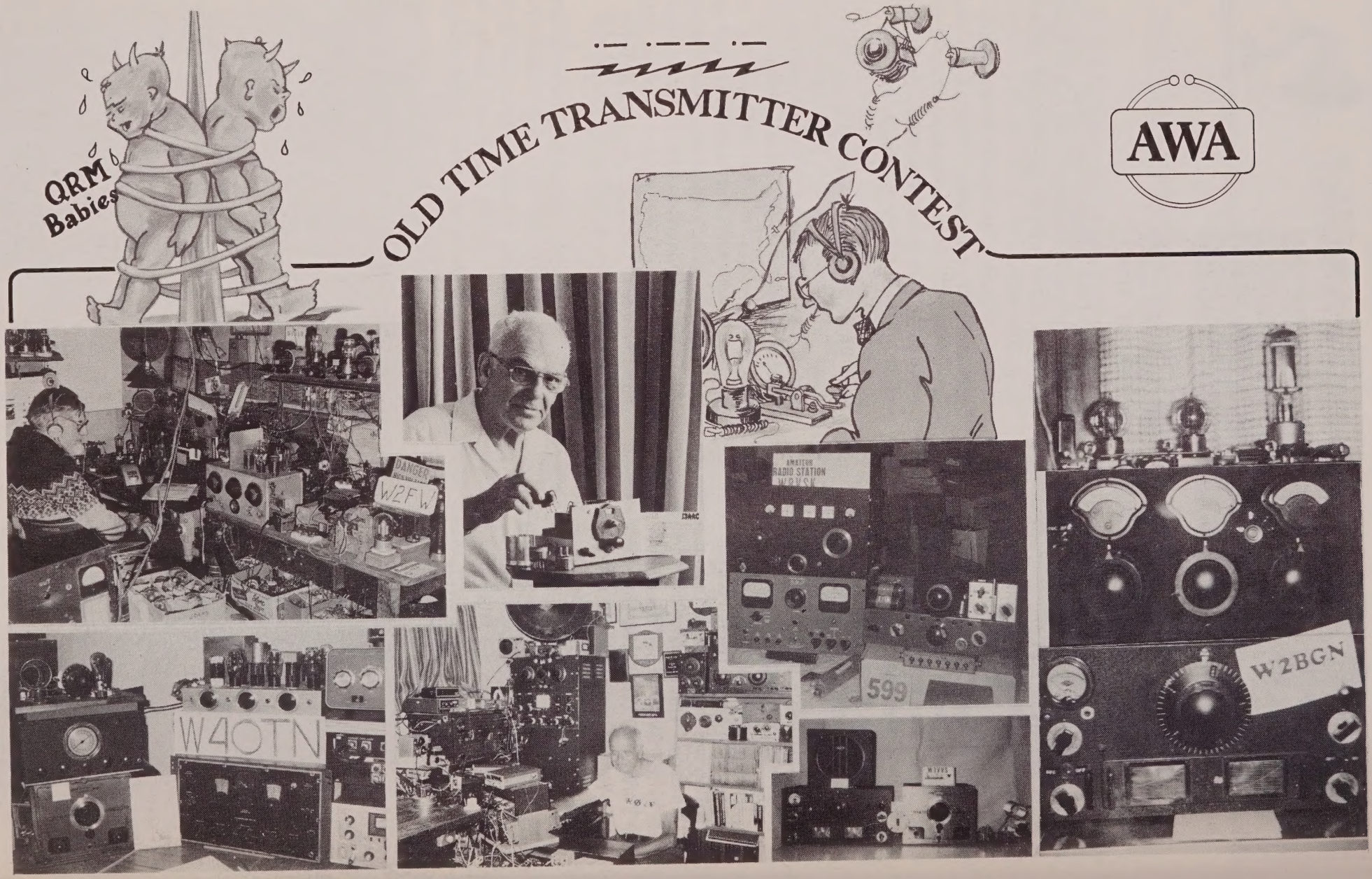
The author bought a horn speaker by telephone from Waves (New York) in 1988. The description was that it was a "look-alike" for the Music Master. This speaker, the "Melody Tone" made by the "World Loud Speaker Mfg. Corp., New York," may have been an imitation of the Music Master horn, marketed after Music Master went into receivership. A look at the two shows many similarities and only a few differences. The left photograph shows the two units, with the Music Master on the right.

The speakers have the following similarities: (1) same height, (2) same shape of the wood bells, (3) similar bell/neck collars, (4) similar gold and black stippled (speckled) necks and bases, (5) same neck contours, (6) cast aluminum necks on both, and (7) same number of wood slats in the bells.

The differences are mainly in the quality of materials and construction. The Melody Tone appears to have been made more cheaply, with some corners cut in manufacturing. These differences are: (1) the wood used is second-quality lumber, (2) the inside of the metal neck-throat area where the bell is attached is less finished, rough in texture, and with three paint blisters about 1/4 inch in diameter, (3) the seam on the outside surface of the gooseneck is rough, (4) the half-shell castings at the bell end of the gooseneck have small but visible valley indentations from the casting operation, and (5) double decals were applied to the bell (showing sloppy workmanship). An inspection by even a novice collector would conclude that overall quality of the Melody Tone speaker is inferior to that of the Music Master.

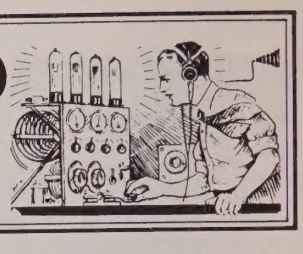
The marketing time period of the Melody Tone may help establish its status as counterfeit or imitation. It was at least an imitation of the Music Master. Any collector seeing an advertisement or date of sale of a Melody Tone horn speaker, please write the author!




QRM
Babies
OLD TIME TRANSMITTER CONTEST
AWA
DANGER
W2FW
W4OTN
W2BGN
599

W2TUS
K2LP
W8AUI
K2LP

AMATEUR RADIO



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RESULTS OF THE 1929 QSO PARTY, OCT. 18-19, 1989

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"Cuz" Fran Thisse, W2BJI, was Top Gun with 32 AWA stations worked. W2VDI and W2LYH were tied for a close second - you can't get any closer - with 31 each.

Known to have participated but no log received: W2FFU, KD2OM, VE3GRO, AA4RM, AK7M/1. Paul, W3VVS, listened from Ohio and sent a check log. Logs received totaled 34.

The 1929 Transmitter QSO Party, wherein AWA members use 1929-vintage self-excited oscillators and under 10 watts of power, was very successful, with approximately 40 stations participating. Many members comment on how the spectrum around 3586 sounded like a "bunch of canaries." Conditions the first evening were only fair and the wind played havoc with some of the Hartleys when the antennas swayed. The second evening, conditions were markedly improved. Operators were very considerate and showed great discipline.

CALL	QSOs	EQUIPMENT
W0OG	5	210 TNT, 9 W
W1BPI	7	210 TNT, 8 W
W1DX	14	45 TNT, 6 W
W1KSK	16	45 TNT, 9 W
W1NV	17	45 Hartley, 9 W
W1SZJ	9	P-P Hartley
W1YJ	8	P-P 45 Colpitts, 8.8 W
W2AN	19	Hartley, 7 W
W2BJI	32	UV-202, 9 W; SW-3
N2FCZ	22	P-P 2A3 Hartley, 9 W
W2FW	9	210 TNT, 10 W
N2GIG	4	Modern
W2HBE	23	UX-210 Hartley, 10 W
W2KFG	21	46 TPTG, 5 W
W2KTU	26	45 TNT, 9.6 W
K2LP	23	210 TPTG, 7 W
W2LYH	31	211 Hartley, 9 W
WB2MVK	10	Modern, 8 W
K2OA	18	210 Hartley, 9 W
W2SN	11	210 Hartley, 9 W
W2VDI	31	P-P 45 Colpitts, 9 W
W3BYM	20	45 TPTG, 5 W
W3DB	21	Hartley, 5 W
WB3HLH	16	UX-210 TPTG, 9 W
W3INV	12	10 TNT, 8.5 W
W4COC	21	Hartley, 9W; HRO
K4KRE	6	UX-245 Hartley, 10 W
W4OTN	8	210 Hartley, 9 W
W4VBX	22	210 TNT, 9 W; '36 HRO
W6TXR	1	WE-216A Hartley, 9 W
W7FS	1	210s TNT; CR-18
W8JYY	13	UV-202, 9 W; SW-3
VE3AUI	23	PP TNT, 8.5 W

A very interesting log from W6TXR was really appreciated as it tells us that some of the West Coast gang want to join the fun. W6TXR heard W0OG at 7:15 PM PST, W2BJI at 7:34 PM, and W8JYY. He would like us to extend the closing time for a few hours so the West Coast can have a shot at working the East Coast and Midwest. Good idea, Bill.

We still seem to have a lack of operation in the Midwest, out in "8" and "9" districts. Only one W8 appeared; no 9s or 5s showed at all.

Cliff, W2SN, was resting in the hospital, awaiting a triple bypass operation, but managed to work 11 stations with his T9 note. Tom Boone gets a gold star for the "most improved note." "By" Goodman, W1DX, says the wind and the rain bother him more than the occasional earthquakes on the West Coast.

I admire those fellows who used the SW-3 for their receivers in this event, although I know they have 1929 breadboards.

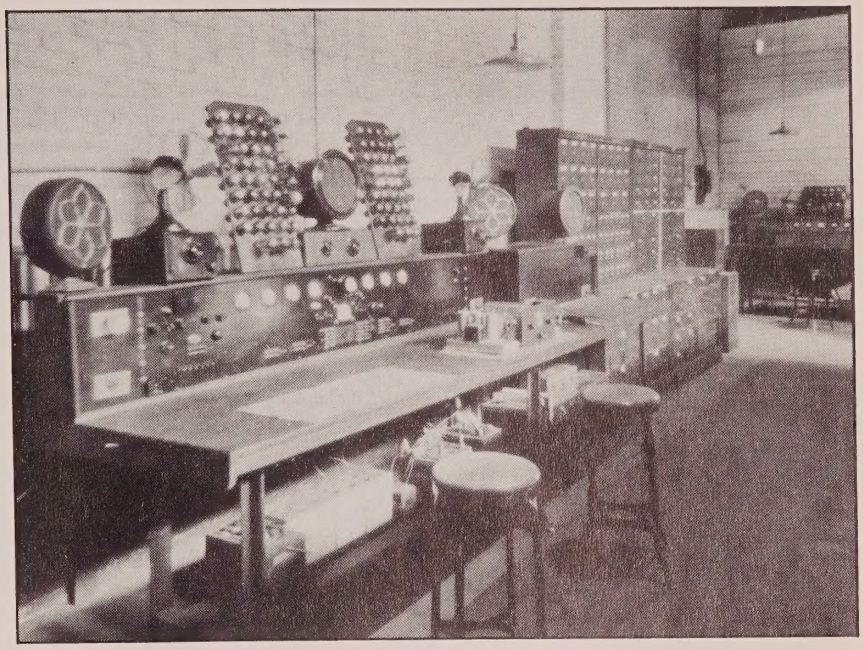
My only regret is that we didn't receive logs from all the participants. It would be nice to see whom they worked and whom they heard, etc.

Altogether a very satisfying event and much fun listening to the chirps and tweets.

Courtesy ARRL

AK SERVICE SETUP

The photo, from new member Robert E. Walters, shows a two-man test setup in the Atwater Kent repair department of the Toledo branch of the Cleveland Distributing Company. Walters was parts and service manager for various Ohio branches of this company, 1928-31. On each bench are AK Model E and F4 speakers, a locally built signal generator, and a tube rack. An AK 35 is in the top middle. Under repair is a Model 55 chassis. A new test position being built is in the distance.



DATES OF PUBLICATION: EARLY U. S. RADIO JOURNALS

The table on the next page has been expanded and refined from a chronology printed in the OTB in 1976. The original job, prepared painstakingly by early AWA members Floyd Lyons and Erv Rasmussen, traced the rise, merger, and fall of the best known wireless-radio-electronic periodicals. Its subjects generally started publication before 1925, not including spinoffs. The various renamings and reuses of names are shown. It should prove useful in building up a library of these items. [LAS]

Notes for the table are as follows:

1. The "Bell System Technical Journal" was quarterly, 1922-51; bimonthly, 1951-64; ten issues per year, 1965-85. Wartime omissions were January-April-October 1942 and December 1943. Special supplements were included in July 1936 and January 1975; there were several dual or triple issues between 1978 and 1985.

2. "Electrician & Mechanic" absorbed "Amateur Work," "American Inventor," "Building Craft," "Collins Wireless Bulletin," and "Scientific Digest" during 1907-13.

3. "Popular Electricity Magazine" combined with "World's Advance," September 1913, becoming "Popular Electricity & The World's Advance." Merged with "Modern Electricity & Mechanics," it became "Popular Electricity & Modern Mechanics" and then (January-March 1915) "Modern Mechanics." Combined with "Popular Science Monthly" in April 1915, it became "Popular Science Monthly & World Advance," then "Popular Science Monthly."

4. "Pacific Radio News" discontinued during WW I, June 1917 through December 1919, and resumed January 1920, continuing through October 1921. It was renamed "Radio," November 1921 through February-March 1947 (skipping April and May 1933). It absorbed "Radio Journal" in January 1926, "Modern Radio" in July 1933, and "R/9" (Note 8) in January 1936.

5. "Proceedings of the IRE" was quarterly, 1913-15; bimonthly, 1916-26, and monthly afterward. It became "Proceedings of the IEEE" in January 1963.

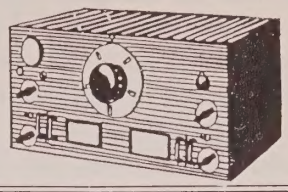
6. "QST" published December 1915 to September 1917 (Vol. 2 No. 10). Discontinued for WW I, it resumed with June 1919 (Vol. 2 No. 11). May 17 (Vol. 2 No. 6) was the "War Number"; November 1919 (Vol. 3 No. 4) was the "Liberty Number."

7. "Radio Amateur News" (July 1919-June 1920) became "Radio News" (July 1920-November 1932). It was "Radio News - Radio Call Book & Technical Review" (December 1932-September 1933). It then became "Radio News & The Short Wave" (October 1933-December 1934), "Radio News & Short Wave Radio" (January 1935-May 1935), then "Radio News" again (June 1938-July 1938). Cover for August 1938 reads "Radio News Combined with All-Wave Radio." Other name variations were used. The title changed to "Radio & Television News" in August 1948, then "Radio & TV News" (April 1957-April 1959), then "Electronics World" (May 59 and on). The only dual issue was April-May 1922.

8. "R/9" absorbed "The Oscillator," January 1932; "Ham News" and "Sparks," December 1933; and "Calls Heard" and "Listening In," May 1935.

TITLE	ISSUES First	Last	NOTES
All-Wave Radio	Sep 35	Jun 38	No Oct 35 issue. Merged into Radio News Jul 38.
Amateur Radio Defense	Nov 40	Jul 41	Published by Radio (Pacific).
Audio	Feb 54	-	Was Audio Engineering till Feb 54.
Audio Engineering	May 47	Jan 54	Bought Radio. Became Audio Feb 54.
Bell Laboratories Record	Sep 25	Mar 86	Renamed AT&T Bell Laboratories Record in 1986.
Bell System Technical Journal	Jul 22	Dec 85	Note 1.
Bubier's Popular Electrician	Nov 90	Jun 06	Became Electrician and Mechanic.
Communications	Sep 37	Dec 49	Was Radio Engineering.
CQ	Jan 45	-	Dual issue: Jul-Aug 70.
Electrical Experimenter	May 13	Jul 20	Became Science & Invention.
Electrician & Mechanic	Jul 06	Dec 13	Note 2.
Electronics	Apr 30	-	
Everyday Engineering	Mar 17	Nov 20	Pocket-size, Mar to Sep 17. Dual issue, Nov-Dec 19.
Everyday Mechanics	Dec 15	Feb 17	Pocket-size. Became Everyday Engineering.
Everyday Mechanics	Nov 30	Sep 31	Became Everyday Science & Mechanics.
Everyday Science & Mechanics	Oct 31	Feb 37	Was Everyday Mechanics.
Experimenter, The	Nov 24	Feb 26	Absorbed by Science & Invention Mar 26.
Marconigraph (U. S.)	Oct 12	Sep 13	Became Wireless Age.
Modern Electrics	Apr 08	Dec 13	Merged with Electricity & Mechanics.
Modern Electricity & Mechanics	Jan 14	Jun 14	Was Modern Electrics. Note 3.
Modern Mechanics	Jan 15	Mar 15	Note 3.
Modern Radio	Jul 31	Apr 33	Absorbed by Radio (Pacific), Jul 33.
Pacific Radio News	Jan 17	Oct 21	Became Radio. Note 4.
Popular Electricity	May 08	Aug 12	Became Popular Electricity Magazine. Note 3.
Popular Electricity Magazine	Sep 12	Aug 13	Combined with World's Advance. Note 3.
Pop. Electricity & World's Advance	Sep 13	Jun 14	Note 3.
Pop. Electricity & Modern Mech.	Jan 15	Mar 15	Note 3.
Popular Radio	May 22	Mar 28	Became Popular Radio & Television.
Popular Radio & Television	Apr 28	May 28	Two months only.
Pop. Sci. Mon'ly & World's Advance	Apr 15	Sep 15	Note 3.
Practical Electrics	Nov 21	Oct 24	Became The Experimenter, Nov 24.
Proceedings of the IRE	Jan 13	Dec 62	Note 5.
QST	Dec 15	-	Note 6.
Radio	Nov 21	Feb 47	Note 4.
Radio Age (Chicago)	May 22	Jan 28	Unrelated to Radio Age (New York).
Radio Amateur News	Jul 19	Jun 20	Became Radio News, Jul 20. Note 7.
Radio Broadcast	May 22	Apr 30	Merged with Radio Digest, May 30.
Radio-Craft	Jul 29	Sep 48	Absorbed R. & Telev., Oct 41; became R-E, Oct. 48.
Radio Digest	Apr 22	Oct 33	Unrelated to tabloid Radio Digest.
Radio-Electronics	Oct 48	-	Was Radio-Craft.
Radio Engineering	Sep 24	Aug 37	Was Radio & Model Eng.; became Comm.
Radio in the Home	Jun 22	Mar 26	Tabloid.
Radio Journal	Jun 22	Oct 25	Absorbed by Radio (Pacific), Jan 26.
Radio News	Jul 20	Jul 48	Note 7.
Radio Review & Television News	Nov 32	Feb 33	Was Television News. Bimonthly.
Radio Today	Sep 35	Mar 39	Became Radio & Television Today, Apr 39.
Radio Topics	Feb 21	Jun 24	Absorbed by Radio Age, Jul 24.
Radio World	Apr 22	Jan 39	Weekly. No issue, Apr, Jul, Sep, or Dec 38.
Radio & Model Engineering	May 21	Aug 24	Became Radio Engineering.
Radio & Television	Oct 38	Sep 41	Was S. W. & Telev.; absorbed by Radio-Craft, Oct 41.
Radio & Television Today	Apr 39	Nov 42	Was Radio Today.
R/9	Sep 32	Dec 35	Absorbed by Radio (Pacific), Jan 36. Note 8.
Science & Invention	Aug 20	Aug 31	Renamed from Science & Invention.
Short-Wave Craft	Jun 30	Dec 36	Became Short Wave & Television, Jan 37.
Short-Wave Radio	Nov 33	Oct 34	
Short Wave & Television	Jan 37	Sep 38	Was Short-Wave Craft; became Radio & Telev.
Television	Sum 27	Jul 28	Only two issues: Vol. 1, Nos. 1 & 2.
Television News	Mar 31	Sep 32	Became Radio Review & TV News. Bimonthly.
Wireless Age	Oct 13	Aug 25	Absorbed by Popular Radio, Sep 25.

THE COMMUNICATION RECEIVER



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SKYRIDER 23: A DIFFERENT DESIGN FROM HALLICRAFTERS

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From the viewpoint of the typical collector of communication receivers of the 1930s, the Hallicrafters SX-23 is in a class with their very first designs and the famed dual-diversity receiver: most collectors have yet to see one, much less put it on the shelf. Author Rosine, one of the few owners, examines this low-production and unusual product of "Halligan's crafters." -Bill Fizette

In February of 1939 Hallicrafters introduced a receiver that was such a departure from their old silver-dial, black-panel sets that it seemed the company was going to alter completely its image as a maker of low-priced communications equipment. The SX-23 "Skyrider 23" differed in so many respects from previous offerings that those who opened the top must have been startled by its appearance.

While National and Hammarlund had been making the most important components for use in their receivers, Hallicrafters purchased fairly standard parts for its sets, and thus was able to minimize manufacturing costs. In many respects the SX-23 indicated an intent to compete head-on with rivals in the receiver field. The IF coils, transformers, and filter choke in the 23 were mounted in cases with the big "h" embossed into the metal, providing eye appeal. The chassis, painted a dark glossy gray, was heavy steel with reinforcing bends on the ends for rigidity. Vent grilles of high-tech appearance coordinated with the front of the matching speaker.

Hallicrafters' promotion claimed the circuit of the 23 was different, supposedly developed some years before by two of their engineers, who built this "ideal" receiver as a private pet project of their own. It is suggested that the lack of certain components, presumably the negative temperature coefficient capacitors in the tuned circuits, prevented production at an earlier date.

The SX-23 did look different. A "Venetian blind" style of metal dial reportedly gave better readability than offered by conventional designs. "Unique" amateur bandspread was touted as the ultimate for the ham. The frequency stability was certainly an improvement over previous models. However, there were some major design deficiencies in the set that must have made it less of a success than the firm planned.

The SX-23 employed only four sets of coils, broadcast through 34 MHz. It used a large three-gang 437-pF variable capacitor which provided bothersome "fast" tuning on the upper bands, 5.2-16 and 10-34 MHz. To spread the 80-, 40-, 20-, and 10-meter amateur bands, this broadcast-type variable was connected by the bandswitch to fixed series and parallel capacitors. This arrangement required so many switched capacitors that a separate page in the service manual is used just to illustrate these circuits. The fixed capacitors in these circuits were nominally 59.7, 104.4, 571, and 943 pF respect-ively for the 10- through 80-meter parallel units, and 51.4, 38.0, 313.6, and 995 pF for the series ones. With the technology available to capacitor makers in 1939, these had to be difficult to produce.

A major shortcoming of this set was its amateur bandspread readout: a 0-100 linear scale for all four bands. Each SX-23 manual contained a bandspread calibration chart matched to the serial number of the receiver it accompanied.

The much-touted Venetian blind dial was a clever departure from the older Hallicrafters silver dials but

offered little for the user. The stylized physical design integrated the S-meter and band indicator into the dial but the meter and indicator were difficult to read. There was no bandspread for commercial frequencies.

On the positive side, the 23 has greater frequency stability than most other sets in the old "h" line. The rigid construction and temperature-compensating capacitors are partially responsible for the stability. The SX-23 I obtained still covered the amateur bands on the bandspread positions, although the tracking had deteriorated somewhat over 50 years. The set is still sensitive and the crystal circuit, which was later incorporated in the SX-24, SX-25, and other receivers, is acceptable.

The tube lineup is fairly standard for an upper-line set of the period: single 6SK7 RF stage, 6SA7 mixer with separate 6SJ7 oscillator, two 6SK7 IFs at 455 kHz, 6SQ7 detector-audio, and 6F6 output. Auxiliary stages are a 6SJ7 BFO, 6H6 noise limiter, 6B8 AVC amplifier-rectifier, and 80 rectifier. The separate HF oscillator is a worthwhile feature. The Dickert noise limiter, while not the best, works well.

I can only wonder how sales of this receiver fared when Hallicrafters introduced the SX-24 a few months later, with calibrated amateur bands, bandspread on all frequencies, and similar performance. Certainly the SX-24 lacked the stability and appearance of the SX-23, but at its list price of $69.50 versus the SX-23's $115.50, it must have been more acceptable to the frugal amateurs of 1939.

The SX-23 was a departure from other Hallicrafters designs. Its shortcomings probably overshadowed its features. Poor sales made it a rather rare receiver for today's collector. For more details on the 23, there is a most interesting *ten-page* advertising spread in QST for March 1939, and the set is covered in Rider's Vol. X.

(Continued from p. 17)

stations; it picked off a voltage that would cut off the first audio stage, getting an extra sales feature almost for free. However, there is no evidence that it reached manufacture.

The Tune-A-Lite had another, unexpected use. Apparently the length of the glow discharge was sensitive to small changes of voltage. According to the "Ham Shack" column in the January 1935 issue of Radio News, it made an very simple AM modulation monitor. Lighted by a small amount of RF from a transmitter, the length of the glow could be calibrated against an oscilloscope to give a direct measure of modulation percentage, at least for positive peaks.

There was a competing neon indicator. The Sears 1722 and 1732 sets, ca. 1934, used a tube of NE-16 (medium) size as a "tuning flasher." Driven by its own IF transformer and 6B7 detector-amplifier, the lamp lighted when a station was tuned in correctly.

The Duovac device was produced in Britain by Cossor as its "No. 3180 Neon Tuning Indicator" until at least 1946. Perhaps improved construction helped its operating life. A receiver construction article in the October 1946 RSGB Bulletin uses a 3180, with an enthusiastic description: "This device has been found infinitely superior to the 'magic eye' type of indicator because (a) the length of change possible is much greater (about 2 in.), and (b) the glow is many times brighter. A further consideration in this case is that it lends itself to calibration for use as an S-meter, by the simple means of sticking a paper scale along one side of the tube." A version of the tuning indicator with a four-pin base was made in France as the "Radio-technique" 4662, by the owner of the "Dario" brand.

One of these rare indicators was sold in last year's AWA mail auction of tubes. While replacements to fit old radios are scarce, it may be possible to get an NE-16 neon lamp to change brightness when used in the old circuit; at least the NE-16 (or 991) has the right double-contact base, diameter, and color of glow. We'd be glad to pass on anyone's experience along this line. [BK-LAS; photo: Bill Johnston, N5KR, via W2GK]

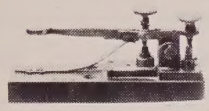
MORE 201/201-A BRAND NAMES

A list of 436 brand names for 201/201-A tubes was published in the OTB, Vol. 28, No. 4 (Feb. 1988). The following names have been added since publication. The number listed after each name indicates its alphabetical placement in the original listing.

437 Action (4A)
438 Duotron (116A)
439 Excel (142A)
440 JA REG (185A)
441 Kleen Tone (196A)
442 Leradion (208A)
443 Maximus (225A)
444 Pace Setter (262A)
445 Peerless Radio Valve, Ltd. (Canada) (265A)
446 Plarite (282A)
447 Tectron (373A)
448 Troy (388A)
449 Vogue Nonpareil (408A)
450 SE-4373 (Navy; selected 01-A) (436A)
451 X-501-A (436B)

A sincere thanks to our many contributors. Keep 'em coming! - W2GK (425 Paramus Rd., Paramus, NJ 07652)

KEY and TELEGRAPH



EDITED BY
LOU MOREAU
W3WRE

Each month brings at least three requests for the date or identification of a key, so here goes:

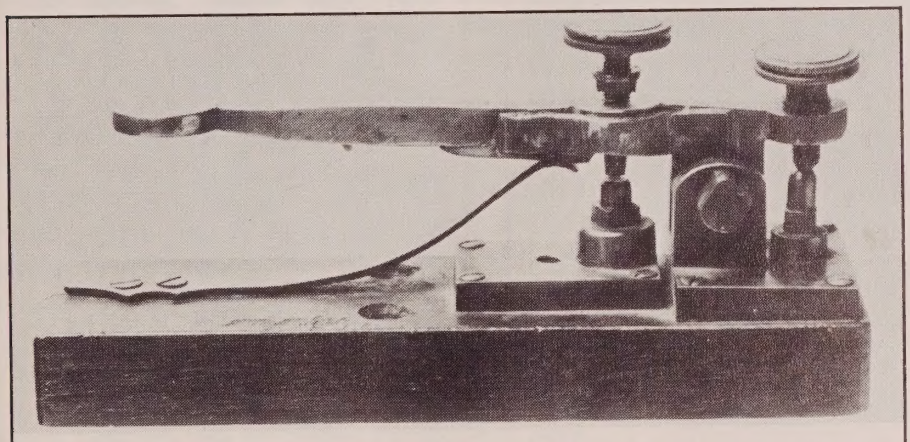
For telegraph keys, there are five milestone dates; for radio only about three; and for the semiautomatics just five. These more or less define the period of the key design.

May 1844 brought the first key in the world, the "Cor-respondent," a strap-style design. But in November of that year came the "Lever Correspondent," and for the next four years no other key was used on the wires. Then, in 1848, the lever was curved into the high hump that we call the "Camelback."

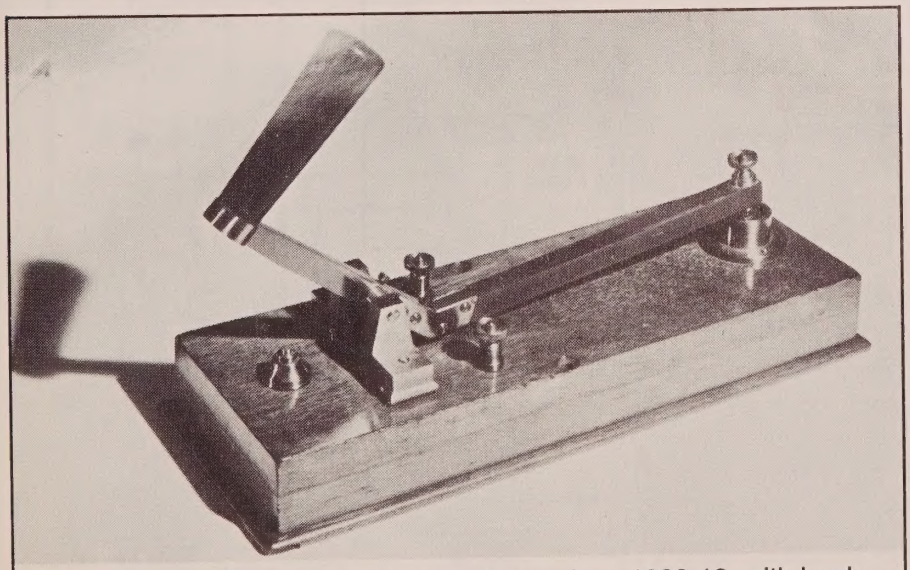
For the next 20 years there were only those two, but at the end of the 1860s the hump was discarded and the lever assumed a less exaggerated curve; these came in 1869. The construction was all-brass, with the trunnion made as a steel rod mounted through the red-brass lever. In 1881 a perfected hand key appeared, with a light one-piece steel lever and trunnion, mounted on an open frame.

Horizontal keys were an answer to the occupational hazard of "telegrapher's paralysis" caused by the vertical action of the hand key. The "double speed" key called the Sideswiper came in 1888. These continued until the semiautomatics arrived in 1902.

The Twentieth Century introduced radio, with spark transmitters requiring large, heavy keys to handle high currents. The period 1900-1910 was the brute-force era of spark. The keys were very heavy, with large coin-silver contacts, mounted on thick wood or slate bases. After 1910, with advances in the art like use of keying relays, they became smaller until the mid-Twenties when CW became the only permissible mode. With CW, telegraph-style keys came into radio.



The "Lever Correspondent," November 1844. All-brass, including the contacts. Photo: Smithsonian Institution.



Marconi Company "Grasshopper" wireless key, 1909-12, with back contacts to protect the receiver. Photo: British Science Museum.

The semiautomatics date from the "Autoplex" (1902-3) that evolved into the "Vibroplex" in 1904. Vibroplex continues to the present. Mecograph was second, from 1906 through 1913, then the very short-lived Hulit (1909 to 1911). Others in the 1904-1922 era are usually listed as "bootleg bugs," as violations of the "bug" patents.

These dates should assist in grouping keys in their proper time periods of construction.

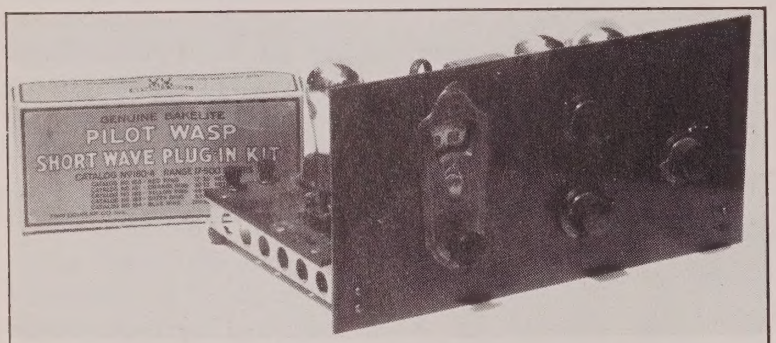
THE PILOT "WASP" RECEIVER

Little has been written about the Wasp receiver, it having been overshadowed by its successor, the Super-Wasp. Both were made by the Pilot Electric Mfg. Co. of Brooklyn, NY, with the Wasp, Type 3-SW, making its debut in mid-1928. The Super-Wasp came a year later; it was well described recently by Marc Ellis in "Radio-Electronics."

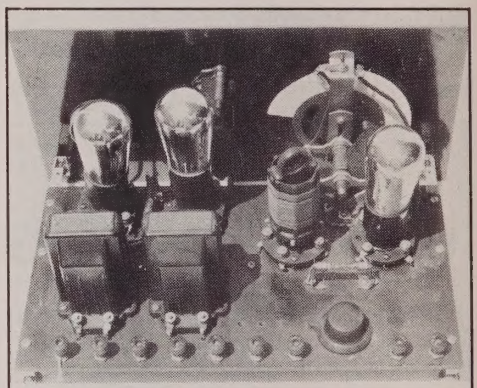
The Wasp was one of the first all-wave kits, tuning from 17 to 500 meters. The circuit is quite conventional: a regenerative detector and two stages of audio using UX-201A tubes. The only unusual feature is the use of two 100-pF variable condensers in parallel to control regeneration; one fully open on short-wave, the same one fully closed on the BC band. Personally, I would have used the extra condenser for bandspread, since I found tuning difficult with the 20-meter coil. The kit price in 1928, with coils, was $21.75. Its claimed range was 11,000 miles, implying that someone had heard VK2ME from Australia on it. The set made it into Rider's Vol. VII.

Pilot parts were noted for their fine design, and those in this set are no exception. The five plug-in coils are easily identified with color-coded handles. In fact, I rate Pilot coils the best of the many available in the 1928-38 period.

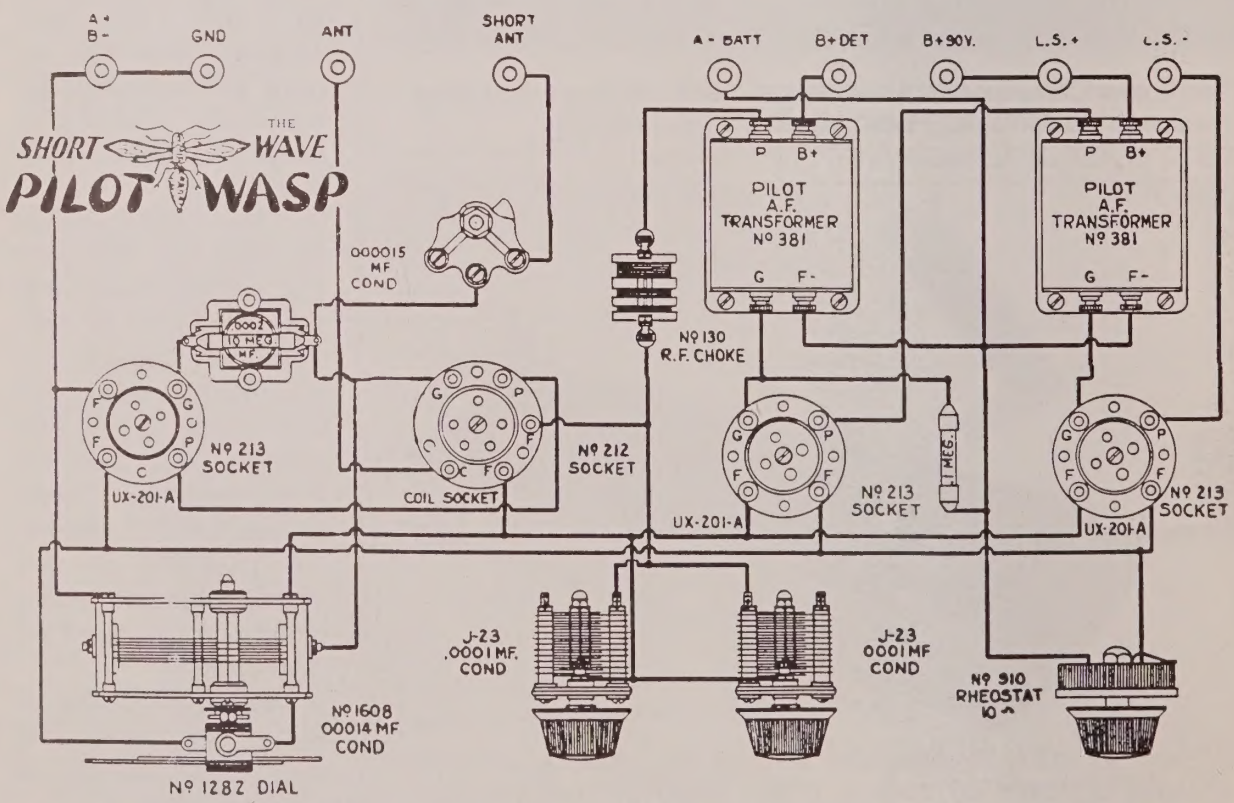
Collectors find the Wasp harder to obtain than the Super-Wasp. The reason, no doubt, is low production compared to the later and better model. -BK



Front view with coil kit. Regeneration controls in center; filament rheostat at far right. Note drilled-out side bracket: "high-tech" in 1928.



Rear view. The panel and sub-base were pre-drilled in the kit.



PICTURE WIRING DIAGRAM OF THE WASP SHORT WAVE RECEIVER.

COLLECTING ANTIQUE INSTRUMENTS

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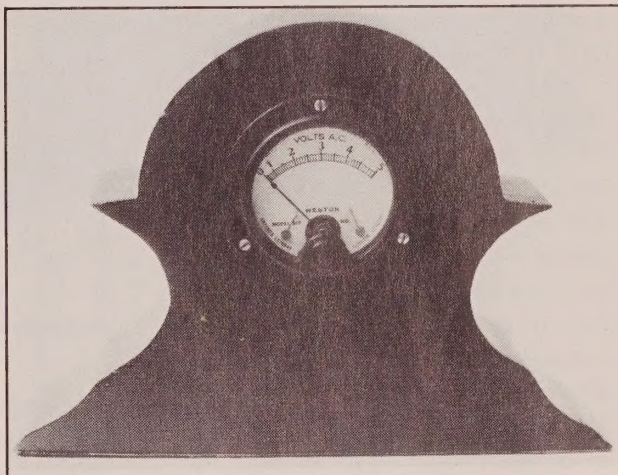
Collecting antique artifacts for detecting and measuring the flow of electrons in a circuit is a rewarding activity in such a diverse field as researching and documenting the history of wireless communication. It lets us get acquainted with and understand the evolution of several applied sciences and areas of technology: physics, electricity, precision mechanics, and electronics.

Many types of antique instruments are available, but in practice they can be divided into two groups: electrical and electronic. In my opinion, the electrical group is of greater interest because it includes very old instruments developed when studies of electricity were just beginning. It includes pith balls and gold-leaf electroscopes, compass and Eindhoven galvanometers, massive brass-cased ammeters, and so on, generally made during the last century. The second group includes electronic instruments, such as early vintage tube testers, old oscilloscopes, etc.

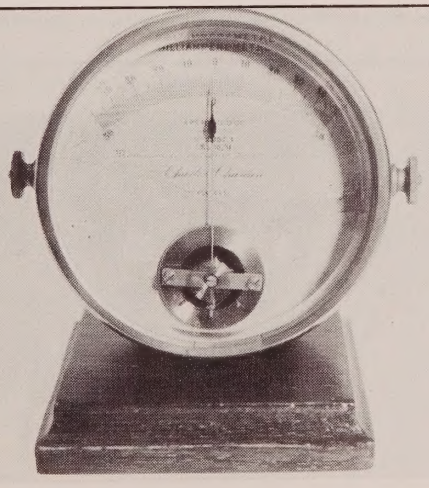
Where is one to find such rareties? The search for those instruments is quite peculiar; in junkyards, old school inventories, flea markets or, with some luck, Aunt Mary's attic!

Of course, there are other interesting aspects of collecting antique instruments such as restoration, maintenance, and even display techniques, which, however, are not within the scope of these few lines. The following photographs may give collectors and historians an overall idea of how to start a representative collection of antique instruments.

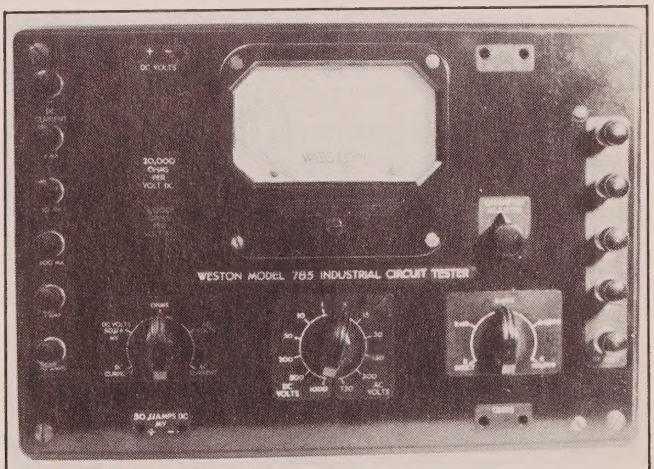
American-made vintage ammeter. (Intended for testing dry cells?)



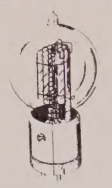
A wooden mounting made by the author, used in his collection to display small antique instruments such as this Weston AC voltmeter made in the Forties.



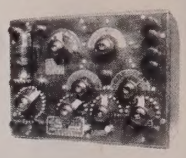
Very old type of milliammeter, made in France ca. 1900. Note the massive brass housing, large binding posts, and attractive scale printing.



Weston Model 785 industrial multimeter, made in the USA ca. 1950.



EARLY EQUIPMENT PROFILE



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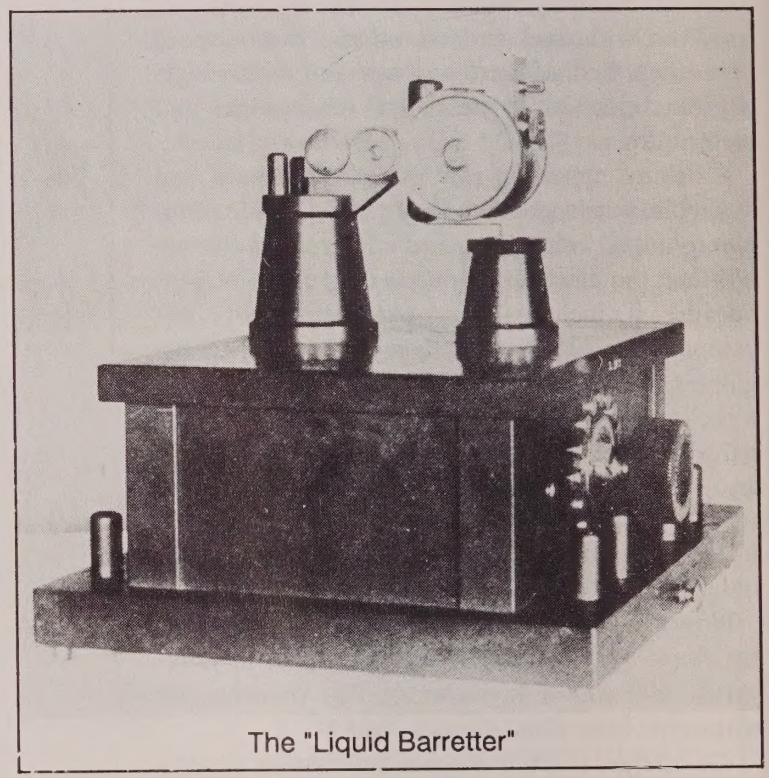
FESSENDEN EQUIPMENT DEVELOPMENTS

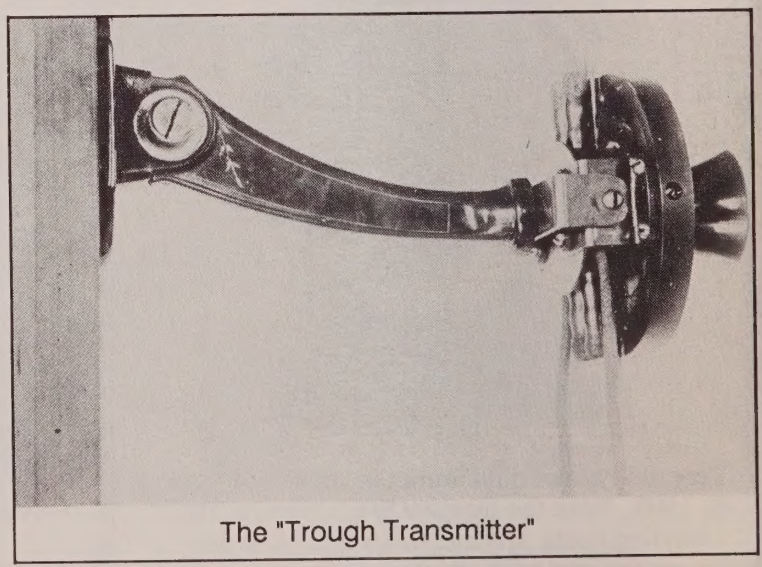
Many important people contributed to early radio communication. One person who produced a complete wireless system was Reginald Fessenden. He began to study Hertzian waves in 1890 and even took the opportunity to visit British physicist Joseph J. Thomson. Between the years 1893 and 1900, he experimented with wireless telegraphy and X-rays. Fessenden's knowledge of mathematics, chemistry, and electrical engineering, including dynamos, was most fortunate.

Working to improve on the coherer as a detector of wireless signals, he developed an electrolytic device which he called a Liquid Barretter. The upper photo shows this unit, which consisted of a very fine platinum wire, only 0.0001 inch in diameter, immersed in nitric acid. Tests made by two of Fessenden's assistants, Glaubitz and Stein, noted that the electromagnetic wave energy required to produce an audible note for a period of one second was 10^{-4} ergs. That corresponds to a claimed power of 10^{-11} watts, or 10 picowatts, or -80 dBm. Any of those represents a very low power indeed, or an observer with quite acute hearing.

For radiotelephone work, an improved form of the standard telephone transmitter (microphone) was designed. Fessenden called this a "trough" transmitter. It consisted of a soapstone annulus to which were clamped two plates with platinum-iridium electrodes. Through a hole in the center of one plate passed a rod, attached at one end to a diaphragm and at the other to a platinum-iridium spade. A water jacket was included in the higher-power versions for the necessary cooling. This type of transmitter was described by Fessenden in a paper, "Wireless Telephony," published in the Annual Report of the Smithsonian Institution for 1908. This paper is valuable in that it provides several illustrations of his apparatus, pictures which are hard to locate elsewhere.



The "Liquid Barretter"



The "Trough Transmitter"

THE TELEVISION RECEIVER

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All correspondence requires SASE for reply

SMALL TVs HIGHLY COLLECTIBLE

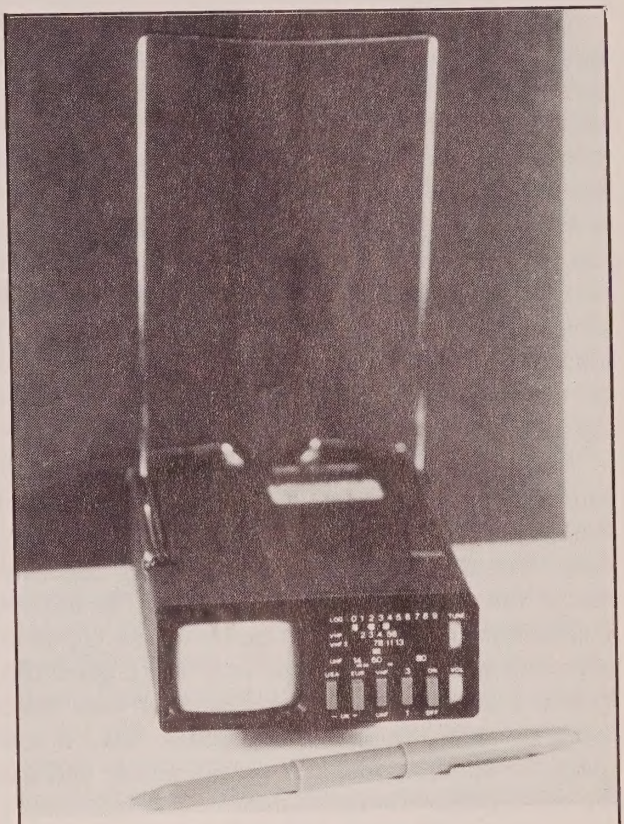
Bruce Kelley, W2ICE

The current interest in collecting early television receivers has now branched into miniature sets. These are a recent development, since they required solid-state technology: it would be almost impossible to make a vacuum-tube TV receiver that could be held in the palm of the hand.

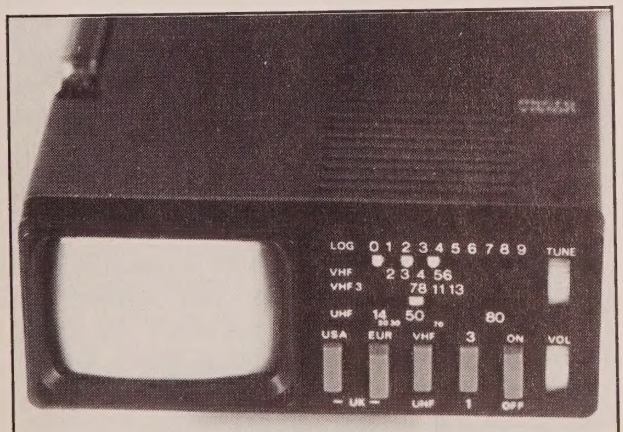
The breakthrough came in 1977. After twelve years of research, Clive Sinclair, founder of the British firm, Sinclair Electronics, announced his receiver with a two-inch screen, claimed to be the world's smallest TV set. The big effort was developing a picture tube of radical design to cut power consumption. The result was a practical set weighing only 26 ounces. It covered VHF with an extendable whip antenna and UHF with a fold-out loop.

Selector switches enable its use with our 525-line system or with UK or European modes. A lengthy instruction chart lists the TV systems for over 100 countries, including such places as Bahrain, Iran, Mauritius, and Pakistan. Truly an international receiver, but, with a rather steep price of $395 in the States, it did not appeal to the buying public at the time. Its uniqueness and low production, however, have made it highly collectible at near its original price.

Part of the current television display at the AWA Museum is a Sinclair receiver, a gift from Jim Reddig. The set works well on built-in rechargeable batteries and appears sensitive to stations within a 40-mile radius. Tuning is touchy because of the tiny wheel-type knob. Packed in a large case, the receiver has 120-V 60-Hz and 220-V 50-Hz charging adapters for the built-in nickel-cadmium batteries, as well as a cigarette-lighter adapter for car use.



The 1977 Sinclair receiver. Size can be judged from the pen.



Close-up of controls on the Sinclair set. Additional settings are on the rear.

Epson produced one of the first all-solid-state sets, replacing the CRT as used by Sinclair in 1982 with a flat-screen liquid-crystal display (LCD). Two years later, Epson announced its Elf color model. Such other manufacturers as Seiko followed with less expensive designs. To my knowledge, Sinclair never developed a miniature color CRT. Like the Sinclair, the original Epson models are worth collecting since they represent the first in miniature solid-state design.

HOW TO GET GOOD BLACK-AND-WHITE PHOTOS

Bob Dennison, W2HBE
82 Virginia Ave., Westmont, NJ 08108

You've built a terrific "old-time" receiver or transmitter and you want to write it up for the OTB. You need some sharp black-and-white photographs to illustrate it but you don't have a lot of fancy photo equipment. What can you do? Cheer up - you don't need a view camera or a darkroom to turn out acceptable prints.

The SLR. Nearly everyone has access to a 35-mm single-lens reflex (SLR) camera. The SLR permits you to focus and frame the subject exactly. Most 35-mm SLRs come equipped with a lens of 50 to 55 mm focal length. Such lenses usually focus as close as 18", permitting an object as small as 9" wide to fill the frame. To photograph smaller objects, you can use a supplementary close-up lens. These come in +1, +2 and +4 strengths and usually sell for less than $10. If you are going to get only one, I recommend the +2. With it, you can focus down to 12" or 13" so that an object about 5-1/2" wide fills the frame. The loss in sharpness is negligible.

The Tripod. When you take pictures close-up, you are working at relatively high magnification so you must not jar or shake the camera during exposure. The SLR tends to vibrate during exposure due to the rapid oscillatory motion of the mirror. To minimize camera shake, mount it on a tripod or other sturdy support. Additionally, it is a good idea to use a shutter-release cable so that your hand doesn't touch the camera. Better still, if the camera is so equipped, lock up the mirror and use the self-timer to trip the shutter.

Background, Composition, Focusing. Most professional photographers, when shooting a small object, place it on a piece of smooth, white paper. This paper comes in 12-yard rolls in widths of 53 and 107 inches.

Rather than buying a whole roll (about $15 for the 53" width), try to get a slightly soiled piece from a local commercial photographer. An alternative is a piece of canvas painted flat white.

Compose your scene carefully through the view finder. If the subject is a radio, choose a camera angle that shows the front, one side and the top. If you are photographing the bottom of a chassis, adjust the camera until the scene is centered, unless some other angle is more revealing. Rear views are usually best taken from off-center and looking down at about 45 degrees. If in doubt, take a few extra shots: film is cheap. Study the illustrations in catalogs and technical magazines to learn how to arrange your subject.

Normally, the 50-mm lens has considerable depth of field - the range of distances in front of the lens in which objects will appear in sharp focus. The depth of field diminishes as the camera focuses on closer objects. It shrinks even more if the aperture is opened to let in more light. When photographing small objects close to the lens, the depth of field may be only a few inches, so careful focusing is essential. A simple rule of thumb is to focus on something 1/3 of the way into the scene. Thus, if the near point of the object is 20" from the camera and the object is 6" deep, focus on a point 22" (20 + 6/3) in front of the camera. This is done most easily by placing an auxiliary object with fine detail at the calculated point (in this case 22") and focusing on it. Then remove the auxiliary object.

Lighting. If you plan on doing a lot of photography, it is convenient to have a couple of telescoping light stands fitted with 10" or 12" parabolic reflectors. The **key** light, using a 500-watt photoflood lamp, is usually placed about 45 degrees to one side of the object and about 45 degrees above it. It will cause a dark shadow to appear on the side of the object away from the light. Now place the **fill** light (using a 250-watt photoflood) close to the camera axis and also looking down. The effect will be to lighten the shadow produced by the key light. Arrange the fill light so the shadow it produces is behind the object and not visible in the camera's view finder. When shooting an object 10" wide, the key light may be as close as about 48". For larger objects, move it farther away or the light will not be sufficiently uniform across the scene.

A cheaper alternative is to use clamp-on light fixtures as often found in hardware stores. Get the kind that has a socket rated at 660 watts and a rubber-covered clamp to allow it to be attached to a chair, table, water pipe, etc. You can use photoflood lamps with built-in reflectors such as the 500-watt RFL-2 and a 300-watt lamp for fill.

The Light Tent. Have you seen those pictures where objects cast no shadow and wondered how it was done? You need perfectly flat light - light that comes equally from all directions. Professionals build a light tent of tissue paper around the object and place the light outside the tent, which then diffuses the light. A small hole is made in the tent for the camera lens. You can achieve similar results by photographing outdoors on a bright-overcast day. The clouds diffuse the light. Pick a day when you can't see your shadow on the ground but avoid dull, leaden-gray days.

Painting with Light. Another way to get shadowless pictures is to photograph in the dark while

"painting" the subject with light applied from all directions. I do it at night in the basement so I can control the light. With the lights on, compose the scene and focus the camera. Set the shutter to B (bulb). Screw in a cable release that has a thumb-screw lock. Put an ND4 neutral density filter on the camera lens. This will slow the effective film speed so it will take four times as long to expose the film. Stop the lens down to f/16 to increase exposure time farther. Turn off all the lights. Press the cable release and tighten the lock. Using a 250-watt photoflood lamp in an 8" reflector, paint the scene with light for about ten seconds. While painting, keep the light in the same plane as the camera. Move it in an arc on both sides and above the camera several times, then aim the light downward so it paints the horizontal surface the object is resting on. Turn off the paint light, release the shutter-cable lock and turn on the room lights.

If you bring the light too close to the camera axis, it will reflect a glare from shiny surfaces (meter windows, decals, chrome trim, etc.) so keep the light about 18" away from the lens axis. Note: the ten second exposure works for me - if your negatives are light (thin), use a longer exposure and vice versa.

Flash. Most SLR cameras made in the last 20 years have a hot-shoe located just above the pentaprism. Slide a compact electronic flash unit into the shoe and you have a convenient, portable source of bright light synchronized with your shutter. Remember to set your shutter speed to 1/60 second. A few cameras will sync at faster speeds. Some flash units are automatic - they measure the light reflected from the subject and stop the flash when proper exposure has occurred. You can buy a basic electronic flash for less than $10. Such a flash will have a guide number of 45. (The GN is usually given for ASA 100 film. Since Plus-X film has an ASA rating of 125, the GN becomes 56.) Divide the guide number by the distance to the subject to find the proper aperture setting. Thus, if the GN is 56 and the distance is 10 feet, set the lens aperture to f/5.6.

Suppose you want a picture of yourself standing proudly beside your relay-rack transmitter. Put the camera, with flash attached, on a tripod and focus on the transmitter. Turn on the flash unit, set the self-timer for ten seconds and start it, step into the scene, smile and wait for the flash. Repeat several times because you may have blinked.

The disadvantage of the small flash unit is that it is a point source of light which gives harsh shadows. If you are taking a picture of a person, have him stand two or three feet away from the wall to soften the shadows. Professional studios use powerful electronic flash units mounted in large white umbrellas to secure a soft, flattering light. If your flash has a tilt-head, you can aim the flash upward at 45 degrees so the light reflects down from the ceiling. You will lose a lot of light so you must open the lens aperture several stops. Take several exposures at various f/stops. An automatic flash will find the correct exposure automatically.

Most problems with flash occur when you take pictures in a room where the camera faces a smooth, shiny surface that reflects a mirror-like blaze of light into the lens. Watch for varnished wood, mirrors, windows, dials, meters and eyeglasses. If someone is wearing glasses, they can be tipped down slightly to avoid this problem.

Exposure. If your camera has a built-in exposure meter, it assumes you are photographing an average scene which typically reflects 18% of the incident light. When you shoot a small dark object resting on a large white background, the meter will give an erroneous reading. There are several solutions to this problem. Temporarily replace the object with a Kodak 18% Gray card and read the light reflected from it, either with a separate hand-held meter or bringing the camera up close to the gray card. About six inches is fine but don't let the camera cast a shadow on the card. If you have an incident-light exposure meter, hold it in front of the subject, point it toward the camera and take a reading of the light falling on the subject. Finally, if for some reason you must take the reading with the camera meter while it is on the tripod, correct the exposure as follows: the white background reflects about 80% to 90% of the light while the gray card would, if used, reflect 18%. The ratio is roughly 4 to 1 or two f/stops. To be safe, take three exposures at intervals of one f/stop centered on the calculated value. Thus, if the meter says to use f/8, you need to open two f/stops to f/4. Take exposures at f/2.8, f/4 and f/5.6.

When photographing something very dark, you often end up with a very thin (light) negative. These are hard to print. It almost always helps to give dark objects an increase in exposure of one f/stop (lower f/number).

Film, etc. Don't waste time and money experimenting with film. Buy a 24-exposure roll of Kodak 35-mm Plus-X. It has fine grain, wide latitude, and a good speed. If you don't have a darkroom, send your exposed film to a lab for developing and printing. Ask for glossy prints - they are sharper, have more contrast range, and reproduce better on the printed page. Look in a current issue of "Popular Photography" or "Modern Photography" for photo labs that do black-and-white processing by mail. One is Custom Quality Studio, P. O. Box 4838, Chicago, IL 60680-4838.

If you don't have a well stocked photo-supply dealer in town, you can order everything by mail. Two suggestions are: Porter's Camera Store, Inc., P. O. Box 628, Cedar Falls, Iowa 50613; and Spiratone, Inc., 135-06 Northern Blvd., Flushing, NY 11354-4063.

NEW MEMBERS

AWA welcomes the following new members. We list all new members routinely - if your name does not appear within six months, please advise the Editor. If you do not wish to be shown, just mark the application form accordingly. AWA does not provide an address list or other directory of its membership.

Mike H. **Allen**, PA; Joe **Anderson**, MA; Jerry **Ayers**, IN, W9ET, Ampex; Ken **Back**, CO, NI0O, KWGN-TV, WLW-TV; Mark J. **Backhaus**, NY; Richard R. **Baragia**, NV; David P. **Bart**, IL; Christopher **Batchelor**, CA; Harvey H. C. **Bauhs**, ON; Sam **Beale**, RI; Louis A. **Bellock**, NY; Frank **Bequaert**, NH; L. **Biondo**, NJ; Fred V. **Bohner**, VA; Probir K. **Bondyopadhyay**, TX, ex-VU2ZQ; Lee W. **Boorman**, NY; David L. **Boudreaux**, OK; Robert **Boulton**, ON; Ted **Bryan**, NC, engr., Jefferson Pilot Comm.; Paul **Briggs**, IL; Richard **Bury**, IL; H. Doug **Campbell**, NY; John **Case**, OH; Michael C. **Casson**, NY, "At least I now know this junk isn't junk."; B. **Chance**, W2IBK, PA; Dave **Christensen**, MN; Tom **Christopher**, NY; Simon **Claughton**, ON; Richard **Clearman**, WA; Richard D. **Cohen**, M.D., FL, K4UTI; Bryan S. **Constable**, VA; First Class coml. lic.; H. James **Cornelius**, K3WAU, NJ, Bell of PA, Bellcore; James F. **Crews**, WV, radio astronomy; Michael D. **Dalzell**, PA; Ralph J. **Del Conte**, PA, Ford Electronics; John P. **Dost**, MI; Steve **Dow**, BC, certified radio tech.; J. M. **England**, Jr., VA; William H. **Farrar**, Canada; Leonard **Favuzzi**, NJ; Robert **Fendrick**, NY, Ithaco Inc.; James A. **Ferguson**, WA8HWI, OH; Edward K. **Fisher**, PA; Joseph R. **Flaherty**, NY, Chip's & Cliff's TV; Alton W. **Fonville**, TX, KB5JQZ; Dennis A. **Frame**, PA; James R. **Frederick**, NY, K2GBR, US Navy, WW II; George A. **Freeman**, IN, WIKI; Jay **Fromm**, NJ, K2DDT; David W. **Gadbois**, TX, WA0VYB; Paul G. **Gennaro**, VA; Frank **Giorgianni**, NY; Harold M. **Graves**, Jr., TN; Thomas G. **Grondin**, TN, American Natural Resources; Bruce **Gross**, NY; Bob **Grove**, NC, WA4PYQ, Monitoring Times; Glenn **Guthrie**, NC; William J. **Hahn**, MA; George W. **Hails**, IL, AT&T Long Lines; Timothy **Harding**, IN, C & E opns. chief, IN Army NG; Art **Harrison**, NY, KFEL, KGPX, Dept. of Commerce (airways radio); Warren **Hartiman**, MD, W3JDF, Westinghouse; Harald **Herp**, MD; Ted **Heumann**, PA; Marie **Hewett**, NY, Strong Museum; Dwight **Hill**, NY, K2KWK; Glenn J. **Hochwalt**, Jr., OH, WB8AHK; Howard **Holroyd**, NY; William **Hook**, IN; George H. **Hughes**, MA, W1ALL, ex-RM1C, USCG; Walter A. **Hutchens**, VA, KJ4KV; Paul R. **Hyman**, PA; Gargiulo **Jergio**, IC80GS, Italy; David B. **Johnson**, IL, Illinois Comm.; Juan **Julia**, Spain, EE, radio paging; Don **Kawecki**, PA; Dean R. **Kazmierczak**, NY, WLJE-FM; Ch. 10, Lockport; Harold **Kelly**, MN; Larry **King**, NY, N2GFW; Ted **Knudson**, CA; Craig **Korpak**, MI; Richard A. **Kronick**, SC; Cecil C. **Kurz**, ME; Andy **Lanset**, NY, independent public-radio producer-reporter; Rodrique **Lavoie**, QU; Tom **Lewis**, NY, Skidmore College; Gerald S. **Liccione**, NY, W2TPL, 40 yrs. at CBS radio-TV, NYC; Eric **Lindquist**, VA, KX4V; L.T. **MacGill**, NY, W3ED; Robert C. **Mack**, NY, ABC Radio; J. J. **MacQuarrie**, ON, VE3AWY, Navy radio officer, CKEY, Collins, etc.; Scott **MacWilliam**, CT; Jerry **Madsen**, MN; B. **Marsden**, IL; Ron **Mauceri**, CA, WA6IUH, VOA; Barry J. **McDaniel**, AR; William F. **McGowan**, CA; M. F. **McNear**, VA, W4LIJ; Harry J. **Miller**, VA, W4PDX; Jerry T. **Miller**, NC; Stephen T. **Miller**, NY; Benjamin **Moore**, PA, N3BM; Gary E. **Moore**, IN; James & Rhoda **Morris**, MA, K1UGM & N1CSI, light bulb engineer, GTE Sylvania; Richard E. **Murray**, NY; Rudy **Nerat**, CA, radio-TV service; Daniel P. **O'Keefe**, PA, Dupont; James E. **O'Neal**, VA, USIA TV service; R. E. **Ostrowski**, NY; D. K. **Owens**, OH; Dale **Parsons**, WV; Eric S. **Parsons**, ON, Bell Canada; Michael S. **Pasko**, NJ; Michael A. **Pavone**, MD, radio & TV repair; Joan H. **Pearlmutter**, MA; Frank E. **Penny**, NY, WEBD-WQXT;Giovanni **Perticara**, Brazil; Andy M. **Peters**, NV; Dennis R. **Peterson**, MN; Richard A. **Peterson**, NM, WB5NEN; Dan **Phelan**, NY, Consolidated Electronics; Robert **Phillip**, FL, EE with Navy 21 yrs.; Bruce **Phillips**, NH; Borgotallo **Pietro**, Italy; Rehzo **Pivas**, Italy; William H. **Plumpe**, Jr., MO; Mike **Pugh**, PA, N3HBE; Gary S. **Rafal**, NY; Bob **Ray**, NJ, W5ZMI, RCA-GE; Michael **Razor**, MN; Duane C. **Redline**, PA, W3UQH; B. Eric **Rhoads**, FL, radio trade publication; Ed & Teresa **Rhoton**, TN; Craig **Roberts**, MN, N1DFF/0, WTIX, WWL, WRKO; David B. **Roberts**, AR; Craig **Robinson**, OH, sales-service comml. 2-way; Alfred T. **Rundle**, NY; Austin R. **Salmon**, NY; Eric A. **Sanders**, IN, Pres., IHRS; Eric **Saul**, NY; Rudolph **Sawyer**, PA; Howard L. **Schonher**, GA, ship and BC operator; Stanley **Schreier**, NY; Daniel J. **Schwab**, MN; Frank J. **Schwab**, OH, W8OK, USN Radioman RM1C; Paul **Schwabel**, NY; Henry J. **Seitz**, NY, CBS, 35 yrs.; Delbert **Shafer**, OH, WD8KXD; Danny **Shaver**, TX, N5NBK; Steven H. **Shugarts**, PA; David R. **Sica**, NJ, video production; Randolph E. **Sieg**, CA; Francis **Simmers**, ND, KA0TVD, WW II mil. op.; Amauri **Sirica**, Brazil; Terry **Skelton**, PA; Michael **Smaga**, CT, N1GVZ; Paul **Smigelski**, MI, N8KJJ; David P. **Smith**, IL, K9UIM; James F. **Smith**, CA; Stephen A. C. **Smith**, NY, EE, General Dynamics; Mark E. **Snyder**, NY; Len **Stafford**, CA, W6WPN, Sec.-Treas., Morse Tlg. Club, SD Chap.; Rich **Stamer**, NJ, Sound Remedy repairs; Bruce E. **Stark**, CA; Chase A. **Stevens**, CT; George W. **Stevens**, CO, W0ATA; Richard B. **Stevens**, NH, W1QWJ, Harvey-Wells, New Eng. Tel. Co.; Robert **Stewart**, CO; Laurence F. **Stone**, VA; Martin **Stonehouse**, ON; Gilbert **Stroobandt**, ON; Larry **Stroobandt**, ON; Chuck **Strozier**, CA, USASA xmtr repair; James L. **Summers**, VA, W4UPW, FCC 1st Class lic.; Eric **Sundberg**, VA, KA4T; David **Swartz**, MO; Verne **Teske**, WI, W9RYA; Raymond E. **Thompson**, MD; Seijiro **Tomita**, NJ; Thomas N. **Traks**, NY, ABC-TV; Tim **Tress**, NY, KA3JRT, field engineer, RCA-National Cinema; Robert F. **Varnes**, GA; Sal **Volpini**, ON; John E. **Walch**, NY, radio-stereo service; Robert E. **Walters**, OH, 44 yrs. parts & service mgr, AK, Philco & Zenith; Kevin M. **Walton**, MA; Tom **Warnagiris**, TX, K3GSY, SW Research Inst., ARINC, etc.; Randolph **Warren**, VA; Jack **Welliver**, AK, WY7A; M. C. **Whiffen**, GA, KF4IX, Lockheed Eng.; C. Bart **Whitehouse**, CO, WA0HWP, radio tech for U. S. BLM, radio-avionics instr.; Norman **Wilcox**, NY; Steven **Wilcox**, NY; William C. **Wilkinson**, NJ, N2HOH, RCA engr. (46 yrs.); Michael **Wimer**, VA, N3APQ; William **Witte**, VA, K2JAD; Rick L. **Wuertz**, SD; Eric **Zetterwall**, MN. [Thanks to Joyce Peckham]

THE MAILBAG

Comments from readers are welcome on any subject of interest in the field of early wireless communications. Because of space limitations, letters which are published may be edited. Send all material to the Editor, OTB.

THAT DUMONT TV SET

Re your [article on] the 30-inch Dumont set - I would have to set the date as 1950 rather than '51. I was a staff engineer at the RCA Industry Service Laboratories for several years in the late '40s and left in late 1950. I remember quite clearly being assigned to work with another engineer, H. M. "Pete" Bach, W2GWE, a well known ham DXer of the day. Our job: take apart the monster set and especially that super-size picture tube, on behalf of RCA's patent attorneys, to help determine what RCA patents might be infringed. (Zenith and Dumont were at that time withholding royalties in challenging RCA's patent position). Sadly, we drilled a small hole in the metal cone to "let out the the vacuum" and eventually salvaged the gun, etc. As you know, Zenith and Dumont eventually won. **Gene Black, W2LL**

SPECIAL SPRAY PAINTS

In regard to the Restoring Old Equipment column in the November, 1989 issue on restoration of wrinkle finishes, the writer states that "the only color usually available is black." That is not quite true. The Illinois Bronze Paint Co. of Lake Zurich, IL, manufactures and sells three colors of wrinkle ("Krinkle") spray paint in aerosol cans: black, French grey, and British brown. It also produces four hammertone colors: blue, green, silver, and charcoal grey. These paints are available in various hardware and indistrial supply srores and lumberyards, though it may take some searching to locate a source. Contacting the manufacturer (800-472-4687 or 708-438-8201) will provide the name of a supplier for a particular area. **Lance Terrell**

[Grey hammertone, eh? Could be very useful for restoring Fifties gear. -Ed.]

MILITARY ELECTRONICS

Service offered: To anyone still interested in WW II Command Sets (Radio Set SCR-274N), I have the original instruction book for operation and maintenance on this popular line of surplus gear, and will share this information with anyone needing it. Stamped envelope to 1959 Chevelle Drive, Baton Rouge, LA 70806. **Wes Chatellier**

Your Nov. 1989 edition of OTB is superior in interest and useful data, starting with the great cover; also the articles [cites eight of the "military" articles]. As you have guessed, I am a Signal Corps radio buff. Thanks for the great job. **Fenton Wood, KB5VQ**

Your article on WW II gear brought back memories. I was an electronics officer on a 2200-ton destroyer, USS Soley (DD 707). I was "stuck" signing for 177 pieces of radio, radar, and sonar equipment. We had many of the sets mentioned. Some of the Army SCR gear was very good and withstood the many bombardments we made. **Ed Patacchiola, W1MCG**

I was quite surprised and pleased to see the cover of the November issue of the OTB, with the familiar WW II gear on it. Time that these vets received more recognition. The picture of the ARB receiver was of particular interest. Come Christmas, I will have had my own ARB for 40 years now! **Fred Chesson**

OLD-RADIO PROGRAMMING CONVENTION

I recently attended the Old Time Radio Convention at the Holiday Inn North, Newark (Airport) produced by Jay Hickerson. You cannot believe (unless you attended) how MARVELOUS and remarkable this meeting was; I could stay for only one afternoon of the 2-1/2 day program, but it was, for $10 entrance payment, WORTH IT! I saw two programs . . . a panel about the Arthur Godfrey shows and his legend . . . Tony Marvin, winner of an early "Talent Scouts" program . . . Charlie Andrews, Godfrey's last producer. . . I then witnessed a live recreation of a "Mandrake The Musician" script, with some heavyweight performers, including a number of living-legends who worked on the original show; of interest, Jackson Beck not only announced the show, but took the part with superb and convincing accent, of an Oriental in the program.

Why, for the life of me, the OTB doesn't announce these conventions, I don't know. Virtually every OTB reader would have <u>some</u> interest in it . . . **Allan Sherry**

[Our announcements of events have traditionally covered only club activities, but there's no pressing reason not to report upcoming commercially produced events of old-time interest. Just get the announcement in here early! -Ed.]

BOUQUETS AND FLAK

The Old Timer's Bulletin keeps improving with each issue. **Kenneth Helton**

I just got finished reading the November 1989 issue of the OTB. I am enclosing an article

["Television's Phony Fiftieth," by Tom Kneitel] from the September 1989 issue of Popular Communications, which relates to Mr. Philo Farnsworth and his television achievements.

It is discouraging that an organization that is devoted to history of wireless such as AWA has also appeared to rewrite history. Mr. Farnsworth's "image-dissector camera tube" rightfully deserves to be the "star of the show," OTB November 1989, pages 5 and 7.

Last year at the conference I believe, or the year before, KDKA was stated as being the first radio station. Many other stations such as KQV, WHA, WHAZ, and others, are well documented as having beaten KDKA. The other stations also deserve mention in any article that describes early radio broadcasting in the United States.

This is why I take issue with you for allowing the "50th Anniversary of American Television 1939-1989" to be placed on the cover of the OTB.

While visiting relatives last year or the year before, television station WRGB was announcing its 60th birthday and at the same time saying that it was the "first" television station. If 1989 is truly the 50th anniversary of American television, how can WRGB Channel 6, a "very famous" TV station be 60 years old? I am very disappointed with the AWA for not getting its events to match up with actual history . . . **Jeff Kitze**

[Well, it goes like this. As reported in the editorial column last February, "American television" is basically "commercial television," the kind that tries to earn returns for the stockholders. Five elements were necessary for viable "American television" to happen.

First, a usable *electronic* technology had to be available; no more scanning discs. That technology had developed through the Thirties through the efforts of Farnsworth, Zworykin, Dumont, Philco, the Don Lee operation in Los Angeles, others, and especially RCA.

Second, organizations and capital had to be ready to build TV stations - not just a lab, a minimum studio, and a homebuilt low-power transmitter, but a real business. That required an operating-production-sales staff, enough facilities to produce at least a few hours of programs every night, multiple studios in high-rent downtown locations, full-power transmitters of commercial reliability with good antenna sites, etc. Funding had to be available to absorb the horrific financial losses of the first several years. NBC (RCA), CBS, and a few others were ready to do so by 1939.

Third, there had to be stable FCC technical standards and frequency allocations - either in place or imminent. Experimental licenses (W2XB, W2XBS, W2XVT, W3XE, W6XAO, for example) were all right for technical development, but hardly for a commercial service. Final rules for commercial operation did not go into effect until 1940, but the basics were worked out by 1939.

Fourth, manufacturers had to be ready with receivers - mature, producible designs, at a salable price, capable of being serviced in the field - and the commitment to do "missionary selling" of those sets to a skeptical public. The U. S. makers were prepared to move in this direction fifty years ago, but needed working stations to generate markets.

Finally, there had to be the transmission technology for real-time network operation. That had been the solution to the high cost of local stand-alone radio production 15 years before. The problem was worse with TV, where programming was *really* expensive. Relaying by off-the-air pickup was no real solution. Fortunately, by 1939 AT&T had demonstrated long-haul transmission by coaxial cable and the development of intercity carriage by radio (RCA, Philco) was well along.

RCA's visible commitment to commercial TV at the World's Fair was a landmark; it indicated that all five necessary elements were finally in place. Hence the OTB staff felt it appropriate to celebrate TV's fiftieth. So did the Smithsonian Institution and the American Museum of the Moving Image, both of whose staffs know a bit about history.

This is not to dishonor Philo Farnsworth. He was a brilliant inventor who devised utterly fundamental TV technology and brought some needed humility to the executive offices of RCA. Nor is it to spoil WRGB's party. As detailed in the May OTB, that station was indeed on the air with a primitive 48-line picture in 1928, a form of television, but not commercial as defined above.

As for the "first" radio broadcast station: I wish I had a spherical Audion for every claimant to that title. One can argue endlessly over definition: first, first regularly scheduled, first surviving, first commercial . . . and so on. Aitken's The Continuous Wave cites a few contenders, and goes on to discuss KDKA. The fact is, KDKA symbolizes the birth of the radio industry and is generally taken to be the "first" station. So if someone gets up at an AWA conference and talks about KDKA as "first," well, that's his right. -Ed.]

HISTORICAL ARTIFACTS

Old-time ads are free to members collecting and restoring equipment for personal use. **The rules:** (1) only one per issue per member; (2) include an SASE if acknowledgement is desired; (3) material must be over 25 years old and related to electronic communication; (4) give your full name, address, and zip code; (5) repeats require another notice - we don't repeat automatically; (6) the Association is not responsible for **any** transaction; (7) we retain the right to reduce the size of the ad if over seven lines; (8) AWA does not accept commercial advertising; (9) deadline for ads in May issue: **March 10**; those received later will be held for the next issue. Mail **all** ads to:

Richard Ransley, 17 Sheridan St., Auburn, NY 13021.

FOR SALE/TRADE

RME69 plus matching speaker, $200; Radiola III plus balanced amplifier, less tubes, $225 ; tubes, SASE for list; QSTs from 1920s, SASE for list. Want early ham transmitters, info on BC-110 and REL #206 xmtrs. F. Parker Heinemann, W1YG, 87 Cove Rd., Lyme, CT 06371.

National HR0-7 receiver including #697 power supply and one coil set, working. Also Peerless cathedral-shaped wood-cabinet cone speaker. Harry Cap, 190 Beech St., Bridgewater, MA 02324, (508) 697-8648.

Vibrators, 6 volt, 4 prong, ATR 334, tested, NIB, replaced 1930s Philco 38-5036 (2 x 4-1/2) elements will fit inside 1-1/2 x 2-7/8 cans, $7.50 ppd; 12 V #G1601, 4 prong Mallory NIB $12 ppd. Special farm radio types (4 V, 6 V) available. Jim Farago, Box 6313, Minneapolis, MN 55408.

Printed material - huge collection. Books, catalogs, etc. Prefer to sell as unit, but will consider otherwise. Large SASE with 65 cents postage for list. John Alley, 48 Judson St., Raynham, MA 02767.

Sams' Photofacts in good to mint cond. Very good deal. Alton Fonville, 816 W. Lockett Rd., Colleyville, TX 76034, (817) 281-7843.

"Midget" crystal set, 1940s, with headphone $40. WE WW I airplane microphone $35. Want Klitzen Model 125 detector & amp. Phillip Drexler, 1175 E. Ripley Ave., St. Paul, MN 55109.

L. Tatro C625, 32-V farm radio. Not working, cabinet good, missing two knobs and dial glass. Tunes 540-3800 kHz, was converted to 110 AC, have xfmr to make original, $25 ppd. Scott Todd, N0BST, 3399 Kent #307, Shoreview, MN 55126, (612) 483-9163.

Riders and Sams, test equipment, tubes, parts, 1000s of unlisted items. Write wants and send SASE for new list. Frank Krantz, 100 Osage Ave., Somerdale, NJ 08083.

GE K52 cathedral, works, $165, GE F74 with tuning eye $95, Airline tombstone farm set $65, Malone Lemmon 5-tube neutrodyne $265, Radiotron b/b 201A w/tip $15 ea., 199s $12, AK speaker $85, Magnavox M4 $100, Magnavox R3-B $135. Pay by certified check. Pat Cutini, 2114 Main Rd., Corfu, NY 14036.

Cloth-covered wire, 20 AWG stranded/tinned, 100' $5 plus $1.50 shipping, 200' $9.50 plus $2.00 shipping. Plastic-covered 22 AWG stranded or stranded tinned wire is $5/200' or $9.50/400' plus shipping. SASE for samples. Gerald Cromer, K4NHN, 1014 Summerland Dr., Cayce, SC 29033, (803) 794-1483.

Schematics 1920-60. Radio, ham, TV, Canadian, electronic organs, PA, misc. $3.50 plus postage. SASE for quotes on manuals. Alton Bowman, 4172 East Ave., RD 2, Canandaigua, NY 14424.

Publications: telegraph, radio, and electronic. SASE for multipage list. Dick Randall, 1263 Lakehurst Rd., Livermore, CA 94550-1851.

Transoceanics: 1000 $100, 3000 $135 with battery cases. Work and look good. Ghirardi Modern Radio Servicing, 1st Ed., Radiotron Designers (Smith) 4th Ed., 1400 pp. Best offers. WD-11 direct replacements, WE 215-A NOS on WD-11 base, $18 ea. Want RCA Radiola 24 and 28 and 2-V farm sets. Need Morris coil winder instruction manual. Charlie Rhodes, 64 Old South River Rd., Edgewater, MD 21037, (301) 266-3691.

ARC R-15 receiver (28-V) with dynamotor $25 ppd; GE dynamotor 5DY882AB1 $10 ppd; Solar model CE capacitor checker, very nice $30 ppd. James Fred, R1, Cutler, IN 46920.

Victor R-34, Motorola VT-73 and TS-16J TV, RCA T-100 with table, AK-67. Want multiband floor model such as GE A205, RCA 262. Bob Decker, 2656 Oneida St., Utica, NY 13501, (315) 797-6614 after 6.

Original TRF panel jacks $11 ea., more or less depending on type and condition. What are your needs? Berj Ensanian, KI3U, PO Box 3342, Williamsport, PA 17701.

National NC-300, near-mint, $100. Prefer pickup. John Crowe, W6ULZ, 22060 Independencia St., Woodland Hills, CA 91364, (818) 347-3058.

Kenwood AM-FM stereo multiplex receiver, model KW-70. All-tube, VG cond., one knob missing. Sale or trade. Want usable ham gear, AK or Radiola radios. Chris Batchelor, 7970 Glenties Ln., Sunland, CA 91040-3314, (818) 353-7848.

Radios, books, and tubes. Send 2-stamp SASE for complete list. Ron Boucher, PO Box 541, Goffstown, NH 03045, (603) 497-2988.

Console radios, restored, in good to exc. working cond. for sale. Also 78s. SASE for illustrated listing. T. Brennion, 215 Common St., Quincy, MA 02169, (617) 773-8356.

National HFS rcvr, Hallicrafters SR200 and HA20 rcvrs, Kenwood TRC57, other xmtrs/rcvrs, test

equipment. Estate of Bill Dezonia, WD4KWG, offered by widow; inquiries and offers to W. Dezonia, Jr., 6184 Devon Dr., Columbia, MD 21044, (301) 740-4586.

QST, 1947-63, most years complete. Total on 200, $50 plus postage. H. Fothe, 10 Jackson St., Sloatsburg, NY 10974.

Webcor EP-2822-1C reel-to-reel tape recorder, all-tube model, with forward and reverse playback in good condition. Best offer. Louis Yadevia, 601 Church Ln., Upper Darby, PA 19082, (215) 622-2573 after 6 EST.

69 yr. collection of old radios, TVs, phonos, ham, military, service-shop parts, literature, flyers, manuals, books, catalogs, Radio Masters, McGee, Cameradio, Burstein-Applebee, etc. 48-pg. list for $1. F. Yonker, W2IBH, 7 Old Farms Rd., Saddle River, NJ 07458, (201) 825-1895.

RCA 8PCS41 projection TV and US TV projection set, both complete and nonworking. Includes new 5TP4. Both are ca. 1947. Joe Anderson, PO Box 204, Weymouth, MA 02188.

National wireless preamp for 20-meter band receiver, ca. 1930. Has 1 coil and tuning condenser with one tube. Brown metal cabinet. $50 plus shipping. L. J. Schedorf, W9EWK, 610 Monroe Ave., River Forest, IL 60305, (708) 366-6564.

Drake 2-B receiver with 2-BQ Q-mult. and book $60, Philco cathedral $375, Philco Jr. $65, Victor R-32 $60, nice AK E speaker (open) $30, Carmel Catalin $400. Want junk Grebe Synchrophase chassis, de Forest Unit Panel with large variable cond., Victor II "slip in" elbow. Walt Sanders, 15 Todd Pl., Terre Haute, IN 47803, (812) 877-2643.

Cabinet refinishing supplies. Full line of oil and powder stains, varnish, shellac, brushes, pumice stone, rottenstone, phono parts, etc., for restoring that radio or phono cabinet. Catalog, $2. Dennis Valente, 32 S. Tyson Ave., Floral Park, NY 11001.

WANTED

National HROs, prewar. Prefer sets that need work or junkers. Also accessories and parts. Trade SW-3 40- and 20-meter bandspread coil sets for HRO coil set B or C. Also have Marconi-Victor code lesson with booklet and case, ca. 1918, missing one of six discs. Stan Hojnacki, 108 Wilson Ave., Blackwood, NJ 08012, (609) 435-8975 eves.

Solar CC-1-60 capacitor analyzer; Century CT-1 condenser tester with instructions and schematic. Paul Williams, 2364 Beaver Valley Pike, New Providence, PA 17560, (717) 786-3803.

AK 42 tuning dial and mounting hardware; NRI Service Manual Vol. 2 of 2. Joseph Schlosser, 7408 Valley Run Dr., Raleigh, NC 27615, (919) 847-2955.

E. H. Scott Philharmonic in Chippendale console and Scott Special communications receiver. Mike Ceklovsky, 3116 Smoky Ct., Sacramento, CA 95826, (916) 363-3211.

Photos of Tuska 225 front panel and inside. Also schematic. Will pay for all. Dick Mackiewicz, 1549 N. River Rd., Coventry, CT 06238, (203) 742-8552.

Radiola 24, 25 and 26. Rounded-corner ones such as RCA 26X1, 65X1, Philco 48-250, etc. Horn speakers including wooden bell. Pre-1940 fixed crystals and crystal radios. Noriyoshi Tezuka, 1-11-2-403 Hiroo, Shibuya-ku, Tokyo 150 Japan.

RCA R-28-BW (art deco) info including original colors and finish, what back looked like. Also want horn speaker shaped like flower similar to Music Master. Steve Langue, Box 33, Waldo, WI 53093.

Documentation: user guides, ads, etc., for Canadian-made Mercury Super 10, WE 4-B & 4-D and Kennedy 281. (Have OTB articles already.) Robert Lozier, 600 E. Green St., Monroe, NC 28110.

Crystal sets wanted by Austrian collector with the largest collection in Europe. Erwin Macho, Ambrosweg 17/A/8 A-1230 Vienna, Austria.

TM 11-486, -487, -227, -600, -850, -4033 and other Signal Corps training manuals. Fenton Wood, 109 Shoreline S. H., Malakoff, TX 75148.

Collins 75A4 manual or one to copy. Also a good 800-Hz mech. filter for same. Bill Shaw, W2HYN, 3282 Oakmount Rd., Holcomb, NY 14469.

McMurdo Silver 801 and 802 rcvrs. Richard Brunner, 10 Brookside Dr., Foxboro, MA 02035, (508) 543-7275 (home) or (617) 589-2258 (work).

Nordmende Globe Traveler Pro German transistor set, 15 bands (11 SW), 110-V inputs, made approx. 1964, in good operating or repairable cond. Mario Portalatin, 1628 NW 16th St., Apt. 3, Miami, FL 33125, (305) 545-9121.

Help with **grid-block** keying mod to Viking Ranger. Also help within 150 miles of Pittsburgh to align and calibrate HQ-129 to factory specs. Looking for Comet Pro or pre-war Super Pro. Brian Roberts, 3068 N. Evergreen Rd., Pittsburgh, PA 15237.

Old telegraph gear such as massive spark-era keys and unusual early bugs; espec. vertical or right-angle types. Gil Schlehman, 335 Indianapolis Ave., Downers Grove, IL 60515.

WW II military radios, accessories, parts kits, power supplies, dynamotors. Aircraft, Navy or vehicular. Collection or single sets. Will buy or trade. Also 16-mm documentary films. Charles DiCecca, 501 Mystic Valley Pkwy, Medford, MA 02155, (617) 396-9354.

Dial escutcheon for 1931 Philco Model 70 or 90 cathedral "Baby Grand." D. K. Owens, 478 Sycamore Dr., Circleville, OH 43113.

Code gear; radiotelegraph signal recorder Model RRD-900 or equiv., Super Stream Key Model S-600 (wedge chrome bug), tape puller Model TP-890 (or equiv. as used by RCA also known as Undulator), Leutz C-7. Gene Greneker, 184 Lake Somerset Dr., Marietta, GA 30064, (404) 422-2979.

Early quack medical violet-ray devices and other interesting types. Richard Cane, 8391 NW 21st St., Sunrise, FL 33322, (305) 741-6838.

Diamond-shape loop antenna, small or medium in size, any good brand, folding or not. Ross Smith, 1133 Strong Ave., Elkhart, IN 46514.

Manuals for HP-400, Tektronix 556 scope, Dymec 24018 digital voltmeter, WE 6H impulse counter, EICO 488 electronic switch, Boonton 260A Q meter, GR 650A impedance bridge, Sola 60-120 V pwr. supply. Copies ok. Chuck Porter, 1934 Fifth Ave., Troy, NY 12180, (518) 274-4863.

Power xfmr, Thordarson T-2098. Has 100 VCT and two 7.5 VCT windings; three terminals on one side and 6 on the other. Will consider anything close. Thanks. Gordon Symonds, 26 Ossington Ave., Ot-

tawa, Ontario K1S 3B4, (613) 2198.

EFM11 German "eye" tube. Craig Hinton, N0MOL, 2668 N. Riviera Dr., White Bear Lake, MN 55110.

Glass dial scale for Philco 39-40 BC-SW rcvr. Any info on Southwestern Instrument Corp. RA2 tester. Allie Lingo, Box 118, Dierks, AR 71833-0118.

WW I equipment; 01A tubes (Magnavox, yellow, blue or rainbow); fancy unusual horn speakers; early galvanometers and medical instruments using them; X-ray eqpt and books pre-1915. Have items to trade. Mel Rosenthal, 5 The Strand, New Castle, DE 19720.

Schematic or info on 1938 Luxor 977W Swedish-made radio. Any contact in Sweden who has info would be of help. 3-contact ceramic socket for UX204A tube. Charles Pierce, 4380 E. Brookhaven Dr., Atlanta, GA 30319, (404) 233-1340.

SX-25 Band 4 oscillator coil. Joe Dreher, W2TKG, 1 MacArthur Rd., Baldwinsville, NY 13027.

Sams' TSM Transistor Radio Series #1 thru 23. Early transistor sets. Harald Herp, 6615 Michele Ct., Huntingtown, MD 20629, (301) 855-7071.

Vibroplex double lever and Dow Bent Bug. Smiley White, PO Box 5150, Fredericksburg, VA 22403.

"All-Star Jr." receiver, ca. 1935, any more info, parts, coils, remnants, etc., on this home-built set featured in March 1935 Radio News. Alvin Bernard, PO Box 690098, Orlando, FL 32819, (407) 351-5536.

Motorola 5A5 (FOS p. 113), 51M1U, 5M12U, 52M2U "Playmate-Jr.," RCA 54B1, Emerson Bakelite Table (AM) AC/DC like #336 but w/bullet knobs and horiz. louvered case, Lafayette Bakelite AM-SW 4-knob AC-DC, 67-V battery for #467, White's Radio Logs 1936-56. A. Sherry, 5410 Netherland Ave., Riverdale, NY 10471.

S-meter for Hallicrafters SX-25, working in good cond. Gerald Liccione, 118 Hiawatha Tr., Liverpool, NY 13088.

Help! Will pay cost for original or copy of maintenance-instruction manual for Jackson 636 Dynamic Tube Tester. Robert Haworth, W2PUA, 112 Tilford Rd., Somerdale, NJ 08083.

Manual, Hickok 209A VTVM. J. Cadrecha, 292 S. Prospect St., Burlington, VT 05401.

Transistors, TVs, radios wanted. We buy it all. 1950s transistor radios, vintage and unusual TVs and advertising, novelty and character radios, tube or transistor. Harry Poster, Box 1883, S. Hackensack, NJ 07606, (201) 794-9606.

T-17/ARC-5 1.3-2.1 xmtr, unmodified. H. T. Brown, PO Box 3187, Lancaster, CA 93586.

1935-39 Zenith chassis or complete console with large round black dial 7.5" dia. Multiband with 6 controls. Howard Sheeran, 3 Mulqueeney St., Wodonga 3690, Victoria, Australia.

IF transformers, ca. 1925, All-American Series R-130, Remler 600s, Silver-Marshall. Price and condition please. Joe Horvath, W6GPB, 522 Third St., San Rafael, CA 94901.

WE audio gear, parts, literature and other quality gear and audio transformers. Joe Roberts, Box 19302, Alexandria, VA 22320, (703) 683-2955.

Chassis or speaker for Zenith Walton cabinet. Pay top price or trade for Zenith Shutterdial chassis and speaker that would complete my unit. Also need power supply and speaker for McMurdo Silver Masterpiece VI. Mike Bukowski, 625 N. Franklin St., Colorado Springs, CO 80903, (719) 630-1717.

EKKO stamps, old MW & SW QSLs, postcards showing radio stations and towers, speaker for Philco 70. Larry Flegle, N4TMW, 210 Wylie Ln., Woodstock, GA 30188, (404) 928-3022.

Taylor T-21 tube. (6L6 type with ceramic base and 6 prongs). Will trade for other earlier tubes or buy outright. Also need 2" of B & W Miniductor type 3011, 3/4" dia., 16 turns/in., #20 wire, or Air Dux 616T, a like type. Wes Chatellier, 1950 Chevelle Dr., Baton Rouge, LA 70806.

Hallicrafters Super Skyrider SX-17, any cond. John Babina, 44 Field Rock Rd., Monroe, CT 06468, (202) 261-2393.

CW xmtrs, small, i.e. WRL CW, Globe Chief Deluxe, Globe LA-1 linear; Ameco PS3 AC supply; Lafayette Voyager and Starflite xmtrs; EICO SW rcvr; Philmore CR5 rcvr; Matric Model 50 QRP xmtr; Kantronics Rockhound and 8040B rcvr, other unusual units. QSLs 1930-69. Gary Wagner, K3OMI, 11124 Oak Hollow Rd., Knoxville, TN 37932.

AK HV xfmr (domed-top type) for model L, 60C, P, H, 84 chassis. Will buy whole chassis. Also two new or good 47 tubes. Gordon Wilson, 11108-50 Ave., Edmonton, Alberta, Canada T6H 0H9

Hammarlund SP-600-JX or equiv. earlier version. David Collins, 115 Chestnut St., Medina, NY 14103.

Knobs for Fada 1000, butterscotch color; #486 tube, preferably blue; cabinet for a Westinghouse Regenoflex (VR p. 111); chassis for Ware Music Master 250, 400, or 460. See Radio Manuf. of '20s, Vol. 2, pp. 199-201. L. H. Swackhammer, RR 2, Alma, Ontario, Canada N0B 1A0.

Three lil' pigs cathedral. Ring stand for WE mike button and RCA 44-style mike with net or station call sign. Stefan Ponek, 93 Mariner Green, Corte Madera, CA 94925 (415) 924-4450.

WE tubes (esp. transmitting) and other WE artifacts needed for study and display. Attila Balaton, 56 Oakland Pl., Summit, NJ 07901, (201) 522-9465.

Ocean-cable artifacts and equipment, National SW-5, SW-45, SW-58, NC-5, SRR, HFC, LC-3, NHU, NCC-10 coil cabinet. Also old Hammarlund receivers. Cash or trade. SASE for list. Robert Enemark, W1EC, Box 1607, Duxbury, MA 02331, (617) 934-5043.

AK radios, cathedrals, tombstones, breadboards, BB parts, Model 50 and other AK table sets; tuning dial for Crosley 58 Buddy Boy, complete chassis for Crosley New Buddy 54, chassis for AK 184, AK type G and R horn. Have Stewart-Warner 102 cathedral and mint 325 battery set, Bendix 526C, Emerson 520 and others for trade. Bob Nicholson, 3423 S. Long St., Topeka, KS 66605, (913) 266-9473.

Grebe CR-8, CR-9, RCA Radiola 20, 60, Tambour 28D, 110, 140; Crosley VI, X; good tipped brass-base UV-201A tubes and WD-11s. Kunio Okura, JA8BI, 8-3-7 Tokiwa, Wrawa, Saitama, Japan 336.

Hytron HY114B tube. Tad Drogoski, 507 Coal Valley Rd., Clairton, PA 15025.

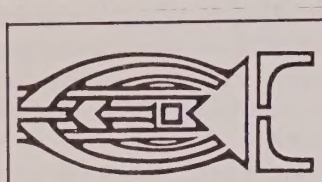
Pocket radios with submin. tubes (Hoffman BP402, Westinghouse H508P, Ekeradio, Hastings FM, Tom Thumb 600, Emerson 839, Emerson 856); also any

pre-1950 home-brew pocket radios, the older the better. Michael Schiffer, 2718 E. 10th St., Tucson, AZ 85716, (602) 325-3532.

Eveready Model 2 speaker, Eveready radio and flashlight catalogs, Eveready radios and older flashlights; other makes as well. Bill Utley, 7616 Brookmill Rd., Downey, CA 90241, (213) 861-6247 eves.

Zenith cathedral; Pilot tombstone; RCA 9-55 chassis, 104 speaker-amp, 100B speaker. Have for trade Crosley 124 cathedral, Jackson-Bell 60 tombstone, Crosley 10-135 (white-chrome) and 10-136E (black-brass). Jerry Talbott, 1440 SW 239th, Hillsboro, OR 97123.

HRO power-supply cover (6-V, type 697). Would consider complete supply. Gary Norman, 17 Ridge Rd., Granby, CT 06035, (203) 653-6373.



RECENT RADIO and ENTERTAINER OBITUARIES

Charles Griffen, W1GYR

John M. Alden, 66, chairman, Alden Electronics .

Leonore Jewell Allman, 82, Lenore Case in "Green Hornet."

Irving Berlin, 101, songwriter.

Amanda Blake, 60, Kitty in TV "Gunsmoke."

Bob Boatman, 59, director of TV "Hee Haw."

Irv Cattler, 71, drummer with Red Norvo, Dorsey, Brown.

Carmen Cavallaro, 76, pianist-bandleader.

Graham Chapman, 48, of Monty Python.

Richard Clark, 93, of WRUN, KPRO, KGUD.

John Condon, 75, announcer at Madison Square Garden.

Alma Cooley-Coehrs, 81, pianist-organist; memorized 795 tunes.

Bette Davis, 81, movie actress.

William Eddy, 87, TV pioneer, originator of the "Eddy Test" for Navy electronics technicians.

George Ehlich, 63, sportscaster on WDUQ, WINH, WTIC, WINF.

Joseph Fisher, 76, Philco TV pioneer.

Dorothy Fuldheim, 96, news analyst; interviewed Roosevelt, Einstein, Hitler.

Ludwig Gluskin, 90, drummer with Whiteman, CBS musical director.

Harold Grams, 75, of WOC, WHO, KSD, etc.

Max Grundig, 91, pioneer German radio-FM-TV maker.

Henry Hall, 91, BBC bandleader.

Johnny Haymes, 69, Sgt. Zale in TV "M*A*S*H."

Charles Hill, 85, BBC chairman.

Vladimir Horowitz, 85, famous classical pianist.

Lu Hurley, 72, helicopter traffic announcer on KGO.

L. A. "Pat" Hyland, 92, radar pioneer at Naval Research Lab, ex-president of Hughes Aircraft.

John Jones, 76, saxophonist with Ellington and Basie.

Stanley Joseloff, 82, radio-show producer and songwriter.

William Judge, 66, ex-president of Magnavox Corp.

Leon Leonidoff, 95, arranger for Radio City Music Hall.

Claire Luce, 88, Broadway and movie actress.

Ted Malone, 81, radio personality and roving reporter. Started at KMBC in Kansas City in 1929; on the air the next five decades.

Sam Moore, 85, writer for "The Great Gildersleeve."

"Sunshine Sammy" Morrison, 76, original actor from "Our Gang."

Frank Pellegrin, 81, of H-R TV.

Damaso Perez Prado, 72, popularized mambo music.

Anthony Quayle, 76, British TV actor-director.

William Reynolds, 62, president of Meredith Broadcasting.

Michael Rice, 47, WGBH (PBS) producer.

Robert Schakne, 63, CBS news correspondent.

Walter Schwimmer, 86, pioneer radio-TV producer.

Marty Sebastian, 70, on Hawaiian stations KMVI, KTOH, KILA.

Charles Seebeck, 73, of WWBB, WQXR, WXCF.

Edmund Stanwyck, 72, owner-operator of Stanwyck Coil Co.

Alfonso Tafoya, 60, Spanish radio-TV announcer on KGGM, KABC.

Norma Terris, 87, star in original "Showboat."

Virgil Thomson, 92, composer and movie critic.

Harry Tugend, 92, writer-producer for Fred Allen and Crosby.

Calvin Wallace, 64, WBZ engr.

Jay Ward, 69, TV animator-creator.

Cornell Wilde, 74, movie actor.

(Continued from p. 7)

information, write NARC, Box 18362, Minneapolis, MN 55418, or call Jim Thompson, (612) 822-4000.

MICHIGAN MEET

Friday-Saturday, July 13-14

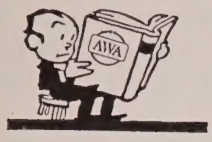
The Michigan Antique Radio Club and AWA will present the annual "Extravaganza" at the Holiday Inn, 7501 W. Saginaw, Lansing MI 48917, 517-627-3211. Open-air flea market and 50/50 raffles both days; inside auction to be conducted by Steve Waldron; programs; donation auction on Saturday; equipment contest. Contact: Jim Clark, 1292 Starboard, Okemos, MI 48864, 517-349-2249.

"MARCONI SHACK" COMMEMORATION

On April 25, the Rocky Point (NY) Public Schools amateur club will repeat its special event of previous years by operating a ham station in the "Marconi shack" (November OTB, p. 12) on 7105 and 21105 kHz, 10 AM - 4 PM local time, with a commemorative message to be sent also on 3705 kHz at 8 AM. Per Henry Bookout, N2FCZ, the shack was moved to the village of Rocky Point as planned, and is now on the south side of Route 25A at the intersection of Rocky Point Road.

NEW CHRS CHAPTER PLANNED

Members in the upper part of northern California or southern Oregon are invited to join a chapter now being formed by the California Historical Radio Society. If interested, write Norm Braithwaite, Box 2443, Redding, CA 96099.



BOOK AND MAGAZINE REVIEWS

Edited by Bruce Kelley

BRO. PAT'S MARVELOUS MUSEUM OF TUBES

by Marc Ellis, "Popular Electronics," Feb., 1990.

Most members are aware of our Tube Editor's museum, as described not too long ago in the OTB (Vol. 20, No. 7, Nov. 1987, pp. 30-33). The collection is located in the Manhattan College electrical engineering-library in New York City. The author tells of the museum's origin and describes its contents, which form one of the world's largest documented collections of vacuum tubes ranging from Fleming valves to current CRTs - over 4000 types! A fascinating illustrated story of a unique museum.

FROM BEVERAGES THRU OSCAR - A BIBLIOGRAPHY 1909-1988

by Rich Rosen, K2RR.

This reference guide catalogs articles published in QST, CQ, Ham Radio, and 73 since January 1945, along with other sources of technical information since 1909 totaling 297 (230,000 pages reviewed). It consists of 92 chapters (1200 pages) with 52,880 references plus 153 keyword pages. It is a promising reference source for engineers, radio amateurs, researchers, and experimenters. (As for the cryptic title: "Beverage" refers to the low-frequency directive wire antenna named for AWA member Harold Beverage; "OSCAR" is the Orbital Satellite Carrying Amateur Radio.) It is available in 15/24X microfiche for $49.95 "amateur net," orderable from: Chaya Rosen, Didah Publishing, P. O. Box 7368, Nashua, NH 03060-7368. [With microfiche readers currently priced at only about $300 undiscounted, this index isn't a bad idea. One could buy a copy and a full set of QST on fiche, getting a fine research source for far less than the cost of the original magazines, not to mention the saving in space. There is however, some looseness in the bibliography - our beloved AWA Review is cited as the *American* Wireless Association *Technical* Review, *New York*! -Ed.]

Museum News

NEW EXHIBITS AT ARMY C-E MUSEUM

The U. S. Army Communications and Electronics museum at Ft. Monmouth, New Jersey has some new exhibits! Some items on display are heliographs, WW I air-to-ground radios, and equipment hand-made for Edwin Armstrong. There is new outdoor radar exhibit which includes the AN/MPQ-4A, AN/MPQ-10, and the Army's new Firefinder radar AN/TPQ-36. Inside the museum, there is a rare BC-403 display scope from the SCR-270 radar of Pearl Harbor fame. A new BC-406 receiver from the SCR-268 was added to the collection recently through efforts of AWA member Don Helgeson and others. Another addition is a "mint" BC-412 scope from the -268. The scale models of the -268 and -270 remain on exhibit. There is a new display of battlefield sensors, Vietnam-style, and an exhibit of some famous tubes from a collection of 17,000: the hand-made prototype Zahl tube, the WL-530, the VT-156, and a Fleming valve.

The museum is in Kaplan Hall, Building 275, on the Avenue of Memories, third building on the right from the rear entrance of the main post. Hours are Monday-Friday, 12:00-4:00. Telephone: 201-532-2445. [LAS, with help from Mindy Rosewitz of the museum]

NEW MUSEUM IN FRANCE

AWA member Guy Biraud is moving his fabulous radio collection ("European Communications Museum") from Fontenay le Comte to Ville d'Angers, France. The museum will be housed in the large classic building Chateau de Pignerolle.

The theme is communication over 2000 years "from tom-tom to satellite." Material will include telegraph and electrical instruments, telephone, wireless, and radio apparatus; as well as printing devices and photographic equipment. Guy will have a section devoted to great visionaries such as Leonardo da Vinci and Jules Verne.

This unique museum is scheduled to open in early 1991. It is about 90 minutes from Paris by high-speed train, by road on Rte. A-11 or by air to Nantes/Angers. [BK]

MIKES NEEDED FOR SIGSALY

One of the more remarkable but secret electronic feats of WW II was the SIGSALY crypto telephone system. This speech coder, which apparently was never "cracked" by the Axis powers, allowed President Roosevelt to converse with Prime Minister Churchill. It also carried sensitive discussions between the Pentagon and Algiers, Hawaii, Brisbane, and other points. Full

details are given in the IEEE Spectrum for September, 1984 and in A History of Engineering and Science in the Bell System: National Service in War and Peace (1925-1975).

The user terminal for SIGSALY was a 300-type telephone, with the carbon transmitter replaced by the element and front castings from a Western Electric 630A "Eight-Ball" microphone. One of these sets has been replicated, and is on display in the underground War Cabinet Rooms in London. Two more sets are needed for a display at the Signal Corps museum at Ft. Gordon, GA.

Col. Blaine Hoover, former signal officer to General Stilwell in Burma, with an SCR-300 walkie-talkie. This is an item in the Motorola Museum at Schaumburg, IL, to open this year. The museum will display civilian radios, TV sets, and industrial radios as well. Details in the OTB as soon as they're available. (Motorola photo)

We've been asked to help come up with a pair of 630As for this purpose. Anyone with a mike or two to spare is requested to contact Thomas W. Thatcher, retired from Bell Labs, at 37 Forrest Ave., Fair Haven, NJ 07704, (201-747-4505). [LAS]

TREASURES - PUBLIC AND HIDDEN - AT THE FORD MUSEUM

The Ford Museum in Dearborn, Michigan, houses one of America's best collections of historical radio equipment. This is confirmed by AWA members Ross Smith, Bro. Patrick Dowd, Elliot Sivowitch, and myself, who were asked to examine and better identify some of this material during the past year.

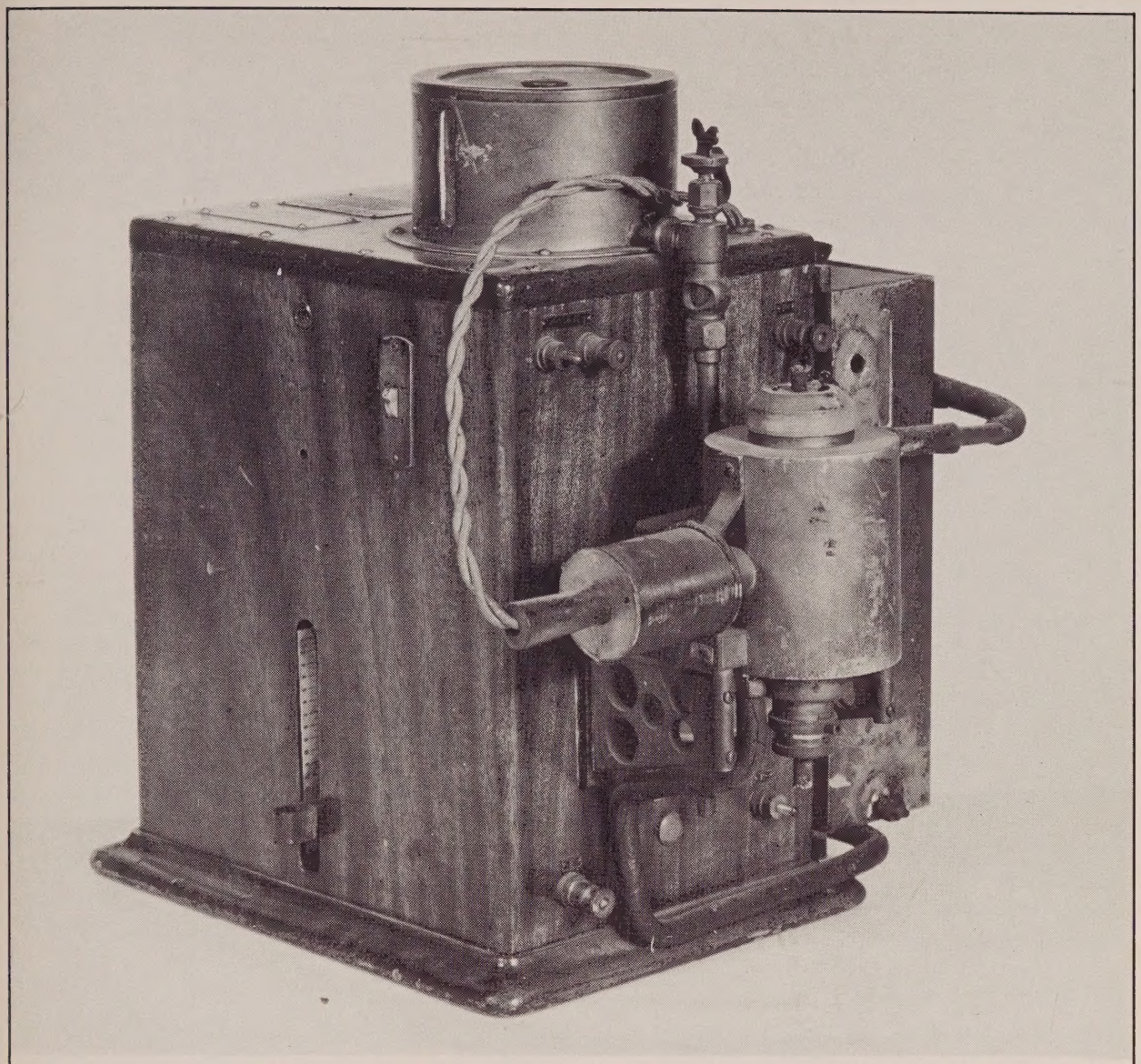
Broadcast receivers on display in the main museum range from early consoles and Grebes to Scotts and Catalins. Television collectors can examine prewar Baird and RCA sets, while telegraph historians can marvel at the collection of rare keys and landline instruments, including an actual setup of an Edison quadruplex. Of particular interest are the pre-WWI artifacts acquired by former RCA historian George Clark. Wireless buffs can see a 200-kHz Alexanderson alternator. Thousands of pieces are on display.

However, only part of the treasures are out for viewing. Hidden in the warehouse are DeForest Responders and Syntonizers, Fessenden Barreters, Ducretet and Telefunken commercial instruments, plus shelves of IP-76s and other Wireless Specialty Apparatus equipment. American and British Marconi transmitters are plentiful, as are magnetic detectors and multiple tuners. We found equipment bearing the names of pioneers John Stone Stone, Fritz Lowenstein, John Hayes Hammond, Massie Wireless, Slaby-Arco, Harry Shoemaker, Amos Dolbear, Kilbourne and Clark, and Federal.

One monstrous receiver was tagged as a multiplex set made in the early '20s by GE for RCA operation on the SS Leviathan. Seen on shelves were five Marconi 10-inch spark-coil transmitters and a multitude of quenched-gap spark transmitters ranging up to 10 kW. Of particular interest was an arc transmitter with a tag bearing the inscription "Poulsen Arc - Purchased by U. S. Navy, 1906."

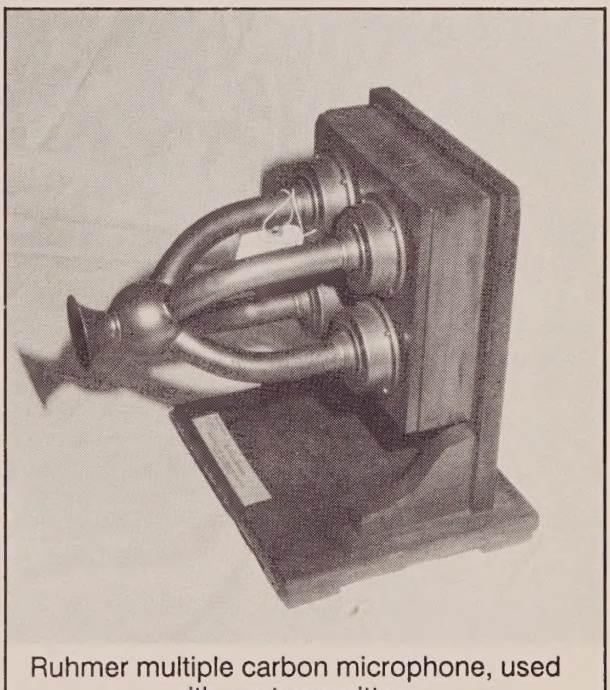
The collection in storage includes the equipment that Charles Apgar used to intercept coded messages from the German station at Sayville just before WW I. Much of this equipment is stored on seven-tier racks in a huge building housing everything from Edison artifacts to steam locomotives. Unfortunately, it is a restricted area, not open to the public.

George Clark collected most of the rare pieces between 1902 and 1939. His huge "Radioana" software collection (books, pictures, notes, etc.) was initially given to MIT, which in turn assigned it to the Smithsonian, where it has been catalogued and made conveniently usable for reference. The hardware (receivers, transmitters, components, etc.) was originally intended for the Smithsonian but during the Thirties was divided between the Ford Museum and a museum in Chicago. Sad to say, much of the equipment given to the latter is unaccounted for today. [BK]



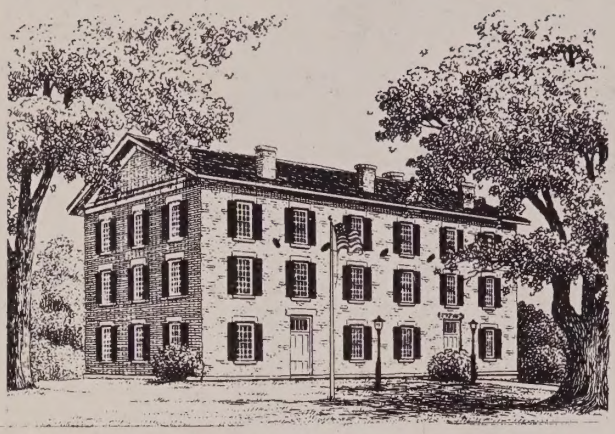
"Oldest voice transmitter in America" - this arc unit was made by de Forest for the around-the-world cruise of the U. S. Navy's Great White Fleet in 1907. It is prominently displayed in a glass showcase in the Ford Museum.

One of several warehouse aisles.



Ruhmer multiple carbon microphone, used with arc transmitters.

THE MUSEUM



AWA ELECTRONIC COMMUNICATION MUSEUM

Location: Village Green, Rtes. 5 & 20, East Bloomfield, New York
Hours: May 1 through October 31: Sunday, 2-5 PM; June 1 - August 31: Saturday, 2-4 PM; Wednesday, 7-9 PM. (Closed Holidays)
Group tours by appointment: 716-657-7489
Museum telephone: 716-657-6260
Amateur Station: W2AN
FREE ADMISSION

President & Head of Trustees: Bruce Roloson
Curator: Bruce Kelley, W2ICE
Assistant Curators: Charles Bliley, K3NAU (Registrar); Henry O'Meara, WB2NRX (Museum); Steve Sykes, KD2OM (Station)
Administrative Staff: Dick Fish, W2OWF; Art Kelly, W2ROB; Don Ray, WA2PKS; Roland St. Louis, K2LKH; Morgan Wesson (Consultant)
Treasurer: Dex Deeley
Legal Counsel: Sherwood Snyder, W2KFU

New equipment in the AWA Museum (sets, parts, magazines, books, etc.): thanks to Paul Andrews, Merrill Bancroft, John Caldwell (W2RDB), John Dietz (W2BFU), Willard Donlay (WB2DBF), Roberto Ferrari, Glen Fuller (N2EXL), Bud Hall (K2LP), Floyd & Lloyd Jury, Fred Linn (W9NZF), Marian Owen, Ed Preston (W2RIZ), John Richardt (W2WIY), Rochester Telephone Corp., Dorothy Rosa (KA1LBO), Tom Rotunda (WA2YUE), N. W. Smith (W3FNU), Norm Smith, Fran Thisse (W2BJI), Tom Walker (N2GIG), Jack Wenrich (K2RY), John Wright (KE2MK), Vestal Press, Xerox Corporation.

AWA MUSEUM NEWS

THE ANNEX: Winter finds the Museum closed but activity continues at the Annex, where members are separating and cataloging material in the new library. The material is divided into 10 categories: books, magazines, schematics, catalogs, photographs, tape recordings/records, call books, amateur manuals, military manuals, and miscellaneous.

The administrative staff has established a strict policy on use of material: under no circumstance may any book, magazine, or other material leave the building. Hours will be established for those who wish to use the library. Members may use the Xerox copier if there is a need for printed copy.

At present, AWA is not staffed to research or copy schematics, so please do not request this favor.

THE MUSEUM: Plans are being made to cover the remaining windows, in accordance with common practice among modern museums. They serve no real purpose and are distracting. The ex-window space will allow for additional exhibits and permit highlighting the displays with spotlights.

The Museum will reopen the first Sunday in May. [-BK]

Workers in the AWA library: Michael Csontos, Mani Pires, Jack Wenrich, Morris Rosenfeld, Ed Gable, Henry O'Meara, Dave Atkins, John Ward, Alton Bowman, Dick Waddell, and Bro. Pat Dowd.